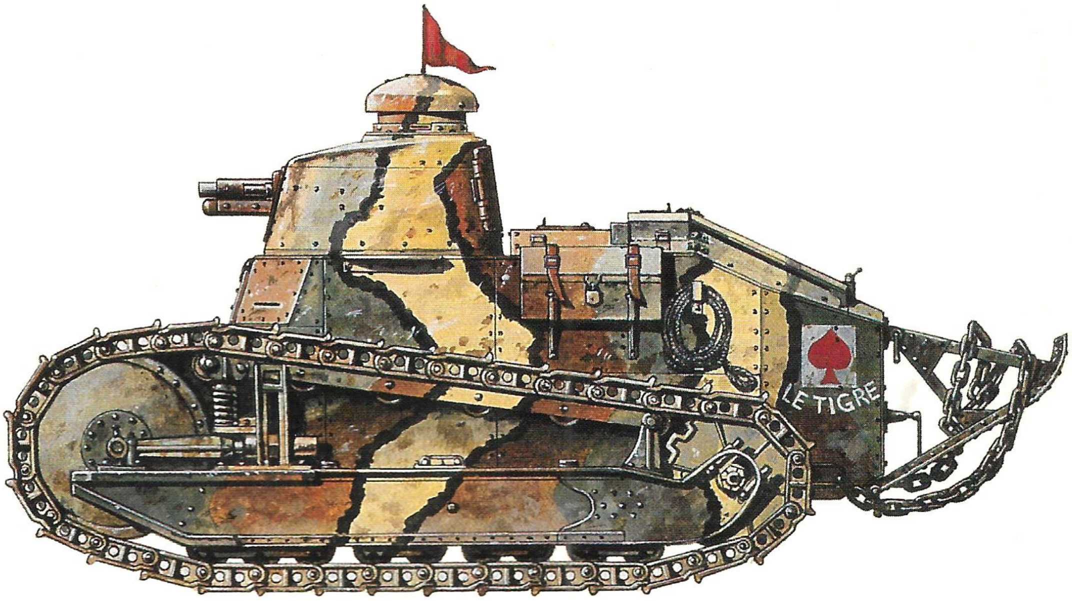
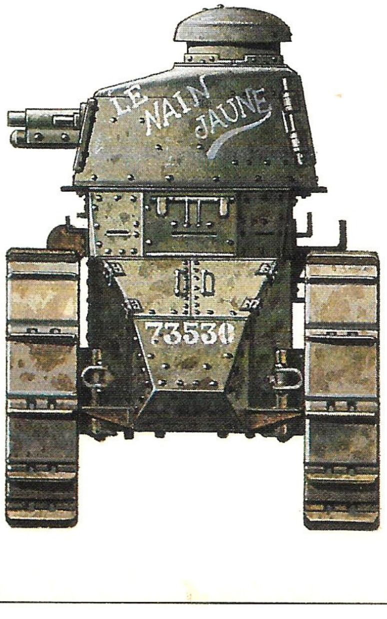
OSPREY·VANGUARD 46

THE RENAULT FT LIGHT TANK



Steven J. Zaloga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Colour plates by
Peter Sarson

VANGUARD SERIES

EDITOR: MARTIN WINDROW

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Artist's Note

Readers may care to note that the original paintings from which the colour plates in this book were prepared are available for private sale. All reproduction copyright whatsoever is retained by the publisher. All enquiries should be addressed to:

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The publishers regret that they can enter into no correspondence upon this matter.

Background and Conception

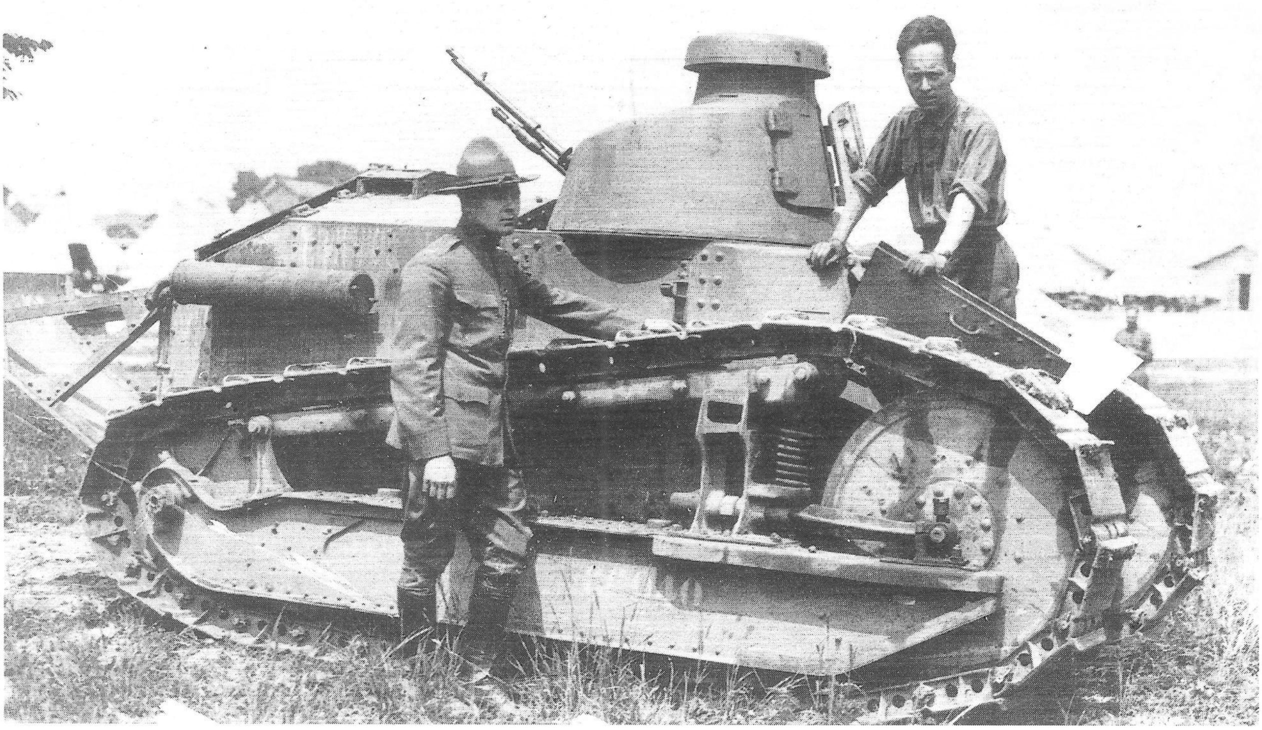
The Renault FT was the world's first modern tank. It pioneered the basic configuration that tanks have followed from 1917 to today: the main gun was placed in a fully traversible turret, the driver in front, the turret in the centre and the engine to the rear. It was produced in larger numbers than any other tank of the Great War. Most First World War tanks vanished—and deservedly so—after 1918. The Renault FT remained in service to form the seed around which most of the world's largest tanks forces were built: in France, the United States, and the Soviet Union, as well as in many smaller armies. It was widely used in the colonial wars and civil wars of the inter-war years, and even saw combat on many of the fronts of the Second World War.

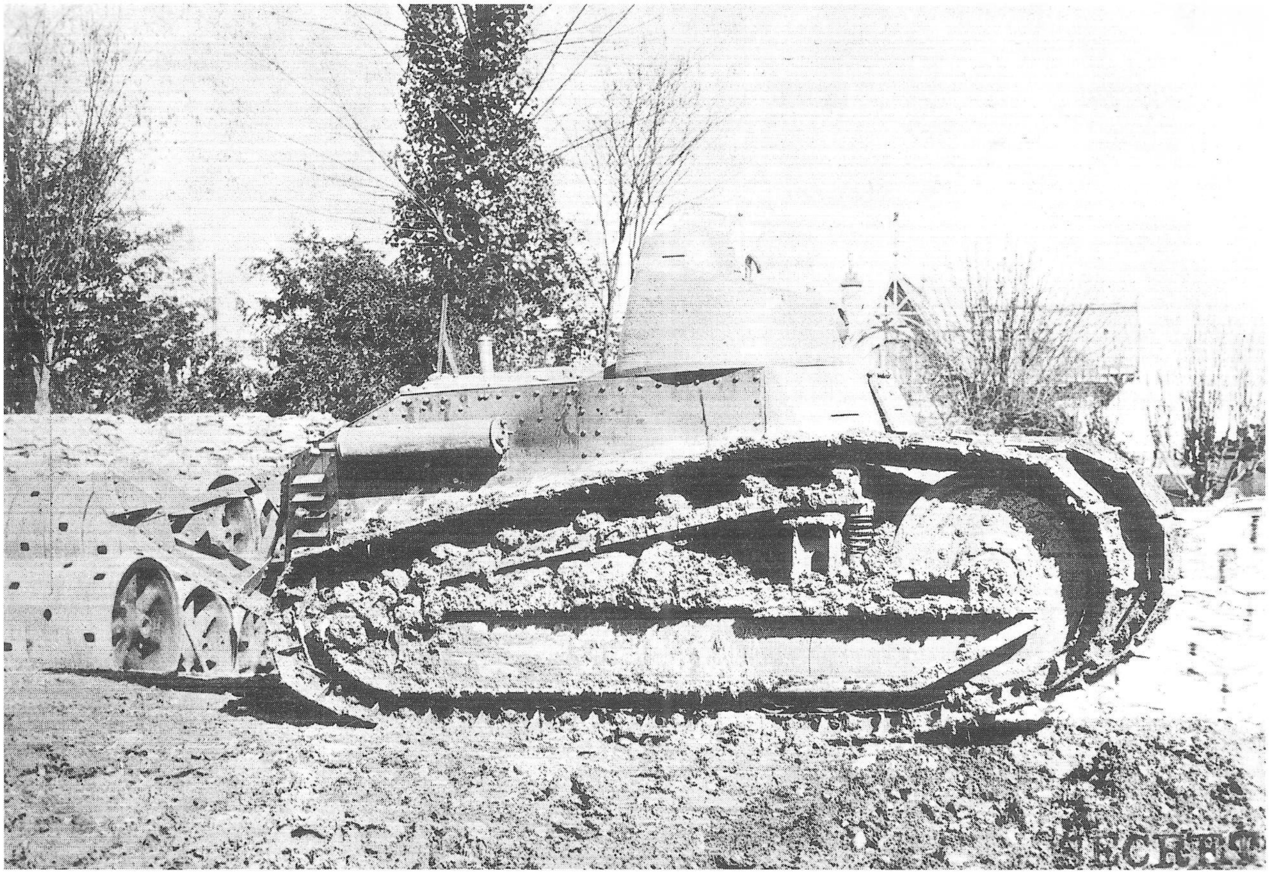
The Renault FT was the brainchild of Gen. Jean-Baptiste Estienne, the father of the French tank force. Estienne was a visionary, enamoured of new technologies. Before the war he pioneered the use of indirect fire tactics for French artillery, and was the inspiration for the use of aeroplanes for artillery spotting. As a young colonel of the artillery in 1915, Estienne convinced the French Army that armoured tractors could help solve the stalemate of trench warfare. Estienne was put in charge of a new branch of the French artillery, the *artillerie d'assaut* or *artillerie spéciale*. He outlined the requirements for the first French tank, which resulted in the Schneider CA.1 *char d'assaut* in 1916. The Schneider proved to be a bitter disappointment for Estienne and the French Army.

Estienne had assumed that it would be a surprise weapon, and that it would face only German machine guns and rifle fire. However, Britain had also been working on similar armoured vehicles. There was little technical co-operation between the Allies; and the British tanks were employed in combat in September 1916, months before the French were ready. In response to their appearance the German Army began to develop countermeasures, notably by moving light artillery up into the forward trench lines when a tank attack seemed imminent.

The first use of the Schneider tanks at Berry-au-

The initial production model of the Renault FT used this type of cast turret. This version is also distinguishable by the cast superstructure front in the driver's area. This type of turret could only mount the 8mm Hotchkiss *Modèle 1914* heavy machine gun, and was quickly superceded by the 'omnibus' turret which could be fitted with either gun or machine gun. This particular FT was one of those provided to the US Army. (National Archives)





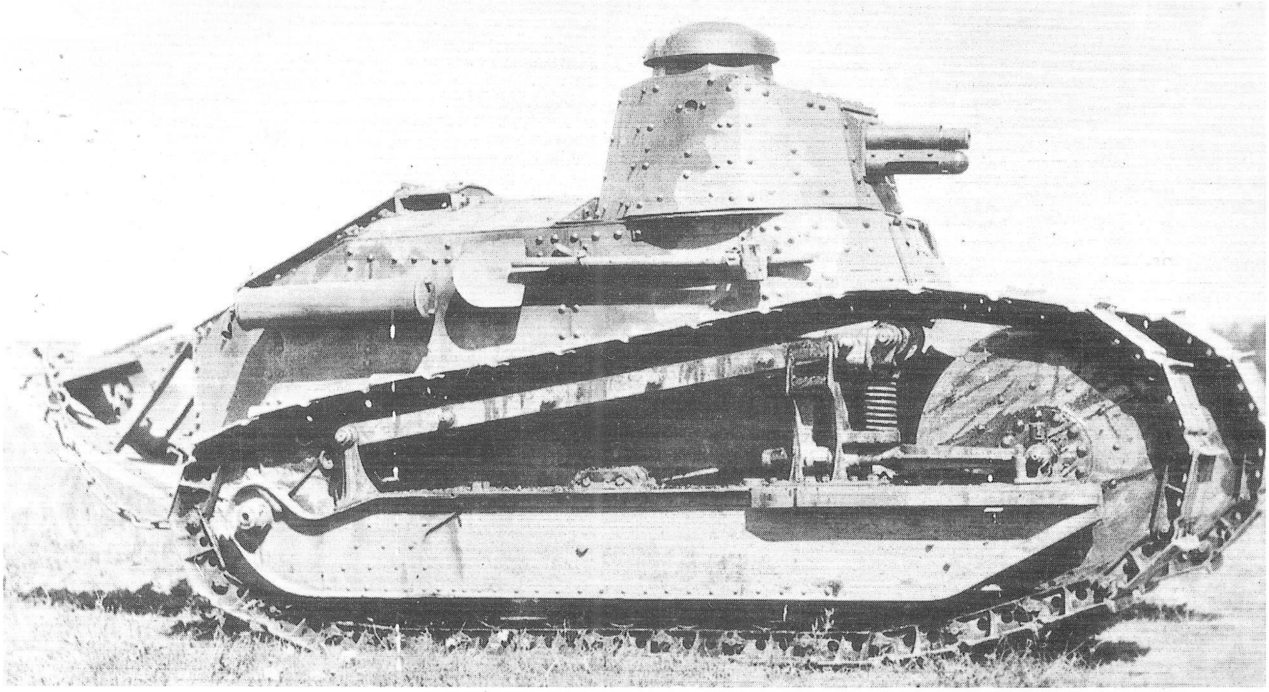
The prototype of the Renault FT differed from the production vehicles in many small details. The turret cupola was integral to the turret casting, and was modified on the production tanks to include a mushroom cover for better ventilation. (Renault)

Bac on 16–17 April 1917 was a disaster. Of 121 tanks taking part, 81 were left behind on the battlefield either broken down or damaged; of these, 57 were completely burnt out. The problems had been both technical and tactical. The Achilles heel of the Schneider was its fuel tanks, which were located in the forward section of the tank. When hit by artillery, they were easily ruptured, spraying the inside of the tank with petrol which then quickly exploded. The fighting at Berry-au-Bac had also highlighted the lack of proper tank-infantry co-ordination. This was improved; but the Schneider *char d'assaut* never became a decisive influence in the trench fighting due to its small numbers and technical deficiencies.

Estienne's unorthodox methods in gaining approval for the construction of the Schneider led to a great deal of resentment in the halls of the military-industrial bureaucracy in Paris. Estienne's rivals in the *Service Technique Automobile* decided to build a 'proper' tank. Estienne's vehicle had a short 75mm howitzer: theirs would have a more powerful long-barrelled 75mm gun. Estienne's had two machine guns: theirs would have four. On paper, the new *char d'assaut* St Chamond was much more impressive than the smaller Schneider. However, it had been designed by engineers with no appreciation of trench warfare. It suffered from serious technical problems, and was derisively referred to as an 'elephant on the legs of a gazelle'. Like the Schneider, it served in dwindling numbers through the bitter fighting in the summer of 1918.

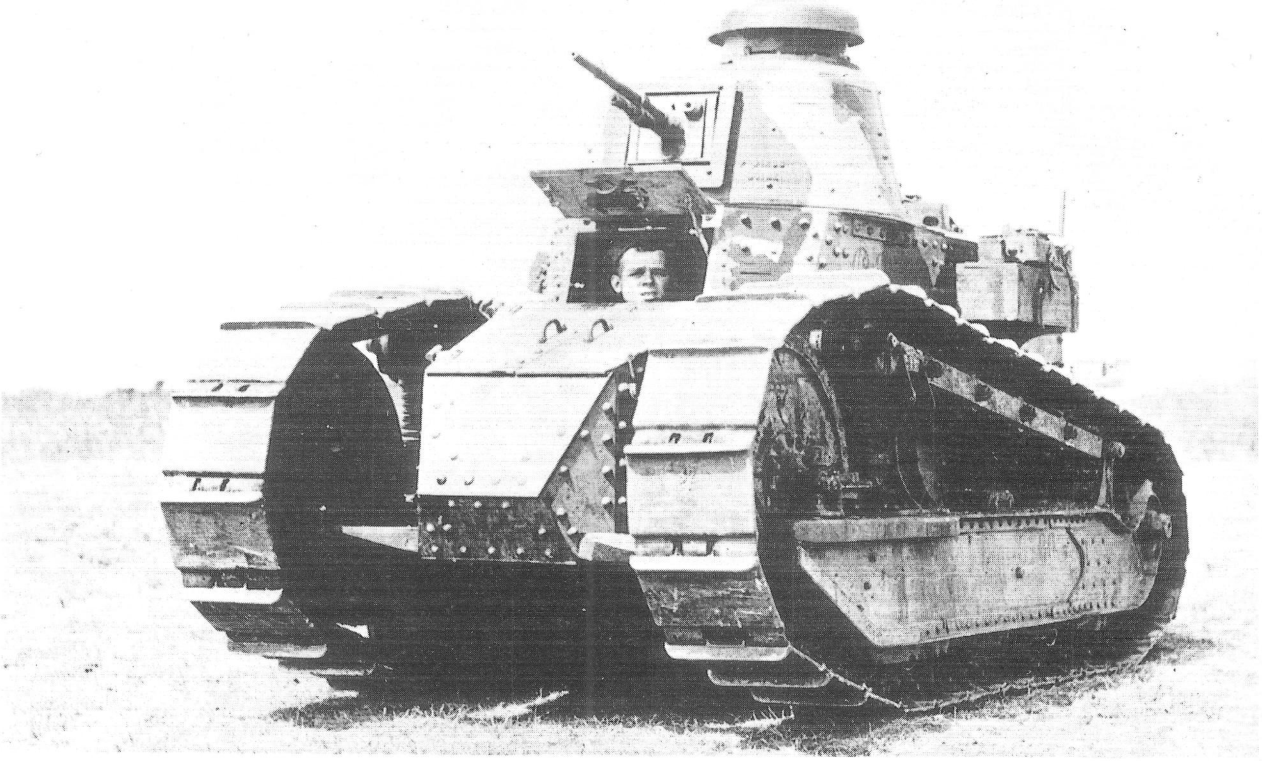
The Light Tank Idea

Following the construction of the first Schneiders in the spring of 1916, Estienne began considering long-term requirements for the *Artillerie Spéciale*. Construction of the Schneider had made Estienne aware of the industrial road-blocks in building a vast fleet of armoured vehicles to overwhelm the German trenches. French military factories were in a



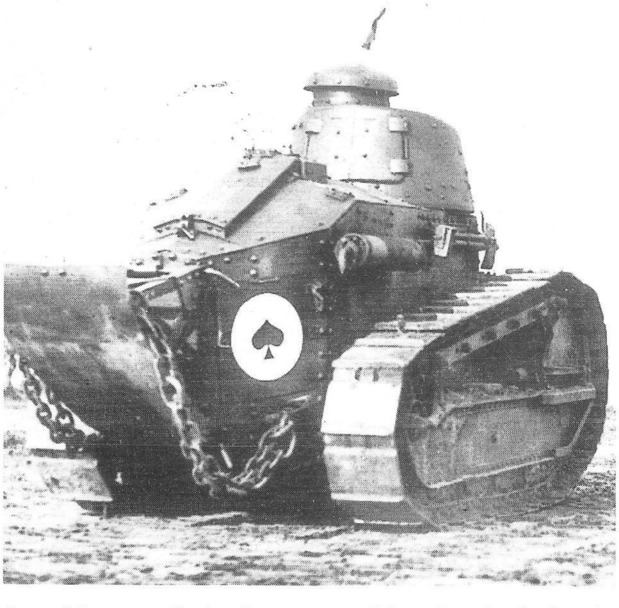
(*Above*) **The standard model of the Renault FT dispensed with the cast front superstructure in favour of simpler riveted armour plate. This vehicle is fitted with the first type of omnibus turret, made of flat armour plate. It is a *char canon* armed with the Puteaux 37mm gun. (National Archives)**

(*Below*) **Renault wanted to develop a round turret for the FT tank, hoping to secure better ballistic protection. This omnibus turret, made of cast and forged steel plate, was the third and final round turret developed for the Renault FT. It was manufactured by the Aciéries Paul Girod in Ugine. (National Archives)**

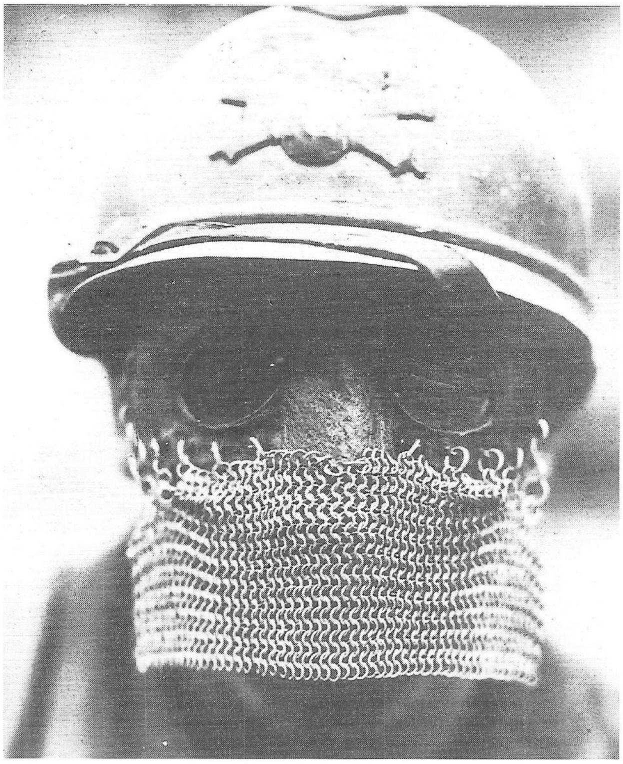


desperate state: the mass mobilisation of skilled manpower in 1914, and the horrendous loss of life in the first two years of the war, had left the factories without a skilled workforce. Armour plate was at a premium, as were high-powered engines. The Schneider facilities were overtaxed producing their first 400 tanks, which were not completed until 1918. What was needed was a small, cheap armoured machine gun vehicle, tailored to the limitations of the French wartime industries. In July 1916, Estienne raised the issue with the auto manufacturer Louis Renault at a chance meeting in the Hotel Claridge. Renault had earlier refused to become involved in the medium tank programme, citing his firm's lack of experience with tracked vehicles and commitments to other programmes. But Renault was intrigued by the light tank idea, and agreed to begin design studies of such a vehicle. The new vehicle was called a *char mitrailleur* (machine gun vehicle).

A wooden mock-up of the *char mitrailleur* was completed in October 1916 and shown to Estienne. He could not convince the Director of Motor Services, Gen. Mourret, to authorise production; so on 27 November 1916, he went over his head to Gen. Joffre, the commander-in-chief. Joffre was an old friend of Estienne, and supported his request for 1,000 of these vehicles. On 30 November 1916 he wrote to the Under-Secretary of State for War, Albert Thomas on this subject. Thomas was only willing to allow the construction of a single prototype as he was not very enthused by the project; and, his obstruction over the next few months considerably delayed the programme. Thomas authorised the first prototype on 12 December 1916 with the stipulation that it be completed by March 1917. Renault and Serre had already been working on the design as a personal project.



One of the more distinctive aspects of French tanks during the Great War was the use of playing card symbols to distinguish sub-units; the spade on a circle indicates tanks of the 1st Section, 1st Company. The pennant on the cupola indicates the type of tank: red for a *char canon* and blue for a *char mitrailleur*.



Although the FT's armour was proof against machine guns and small arms, hits could knock off spall on the inside of the armour plates. As a result, FT crews wore these ungainly protective face masks, as also used by British tank crews. (National Archives)

On 30 December 1916 Renault showed a refined, full-scale wooden mock-up to the Consultative Committee of the Assault Artillery. Gen. Mourret felt that the centre of gravity was too far to the rear and the tank too light; another member suggested that ventilation was inadequate and would result in asphyxiation of the crew after ten minutes of firing. One young army officer complimented the elegance of the design but sarcastically referred to it as a '*charmant joujou*'—'a charming toy'—of little combat utility. However, the remainder of the committee did not agree, and on the basis of a seven-to-three vote, the committee accepted the design and approved the production of an initial batch of 100 *chars mitrailleurs*.

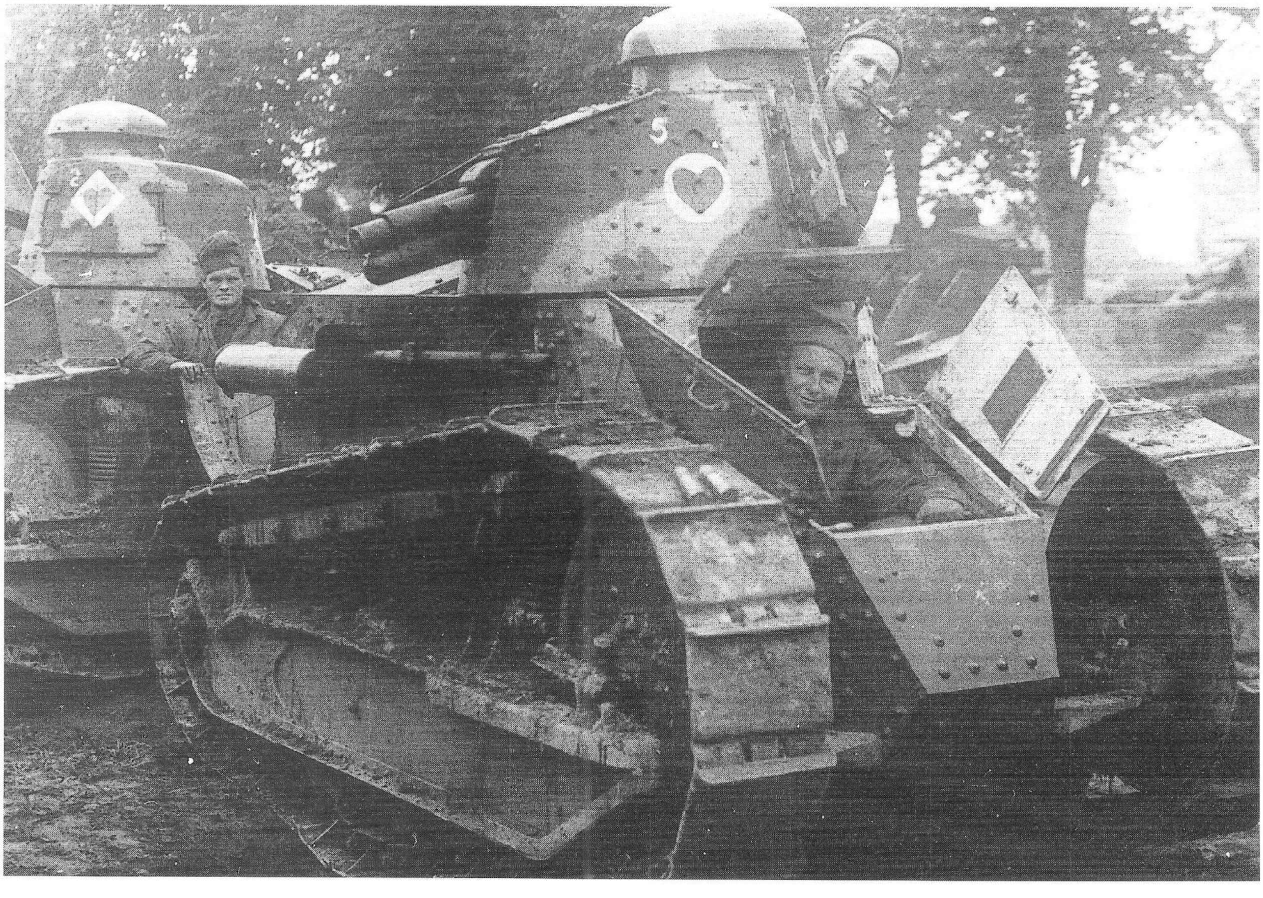
This vehicle soon became labelled the Renault FT. There is some confusion as to the origin of the designation FT for this tank. It has been incorrectly described as an abbreviation for *faible tonnage* (light weight) or *franchisseur de tranchées* (trench crosser). In fact, however, it was simply a Renault product designation given to sequential order to all Renault automobiles and vehicles like AG (the Marne Taxi), EG (artillery tractor), FU (heavy lorry), etc. Officially, it became known as the *char léger Renault FT modèle 1917*, which has sometimes led to the unofficial abbreviation 'FT-17'.

The 100-tank order of December 1916 was amended in February 1917 to 150 tanks. The first *char mitrailleur* prototype was completed at the end of January 1917, and put through tests at the Renault factory at Billancourt. Estienne had the prototype sent to the *Artillerie Spéciale* centre at Champlieu for further tests to correct any remaining problems; he was aware that recent political changes could doom his project, and he was insistent that the *char mitrailleur* should be perfected before its official trials in April.

Bureaucratic Delays

In the wake of the horrible blood-letting around Verdun in 1916, Gen. Joffre was sacked, to be replaced by Gen. Robert Nivelle. Estienne lost his protector, and Gen. Mourret continued to make known his lack of enthusiasm for the cheap little Renault *char mitrailleur*. Nivelle, an artillery officer like Estienne, did not share his enthusiasm for the new branch of the artillery force. As a result of his

A pair of American Renault FTs at Varennes during the Argonne Forest fighting on 12 October 1918. The Americans followed the French pattern of playing card markings, but carried them on the turret sides and rear, adding an individual turret number. This tank is fitted with an omnibus turret with 37mm gun. (National Archives)



A column led by a *char canon* with Girod turret of AS 337, 13^e BCL, 505^e Régt, while supporting US troops in the Argonne Forest fighting near Montfacon on 10 October 1918. (National Archives)

experiences around Verdun Nivelle wished to place greater emphasis on the production of tractors for towing heavy artillery, and not on tanks. As a result Albert Thomas, as the Minister of Armaments, informed Renault that priority was to be given to the completion of an existing contract for artillery tractors at the expense of the tank programme. Thomas was very unhappy with Estienne's proposal to build a thousand of the Renault *char mitrailleur*, feeling it would completely disrupt the already overtaxed French war industry. However, the Consultative Committee of the Assault Artillery supported Estienne enthusiastically, and on 10 April voted for the production of 1,000 more Renault FT tanks. They even managed to win over Gen. Nivelle, who reversed his earlier decision on 13 April 1917, now giving priority to tank production.

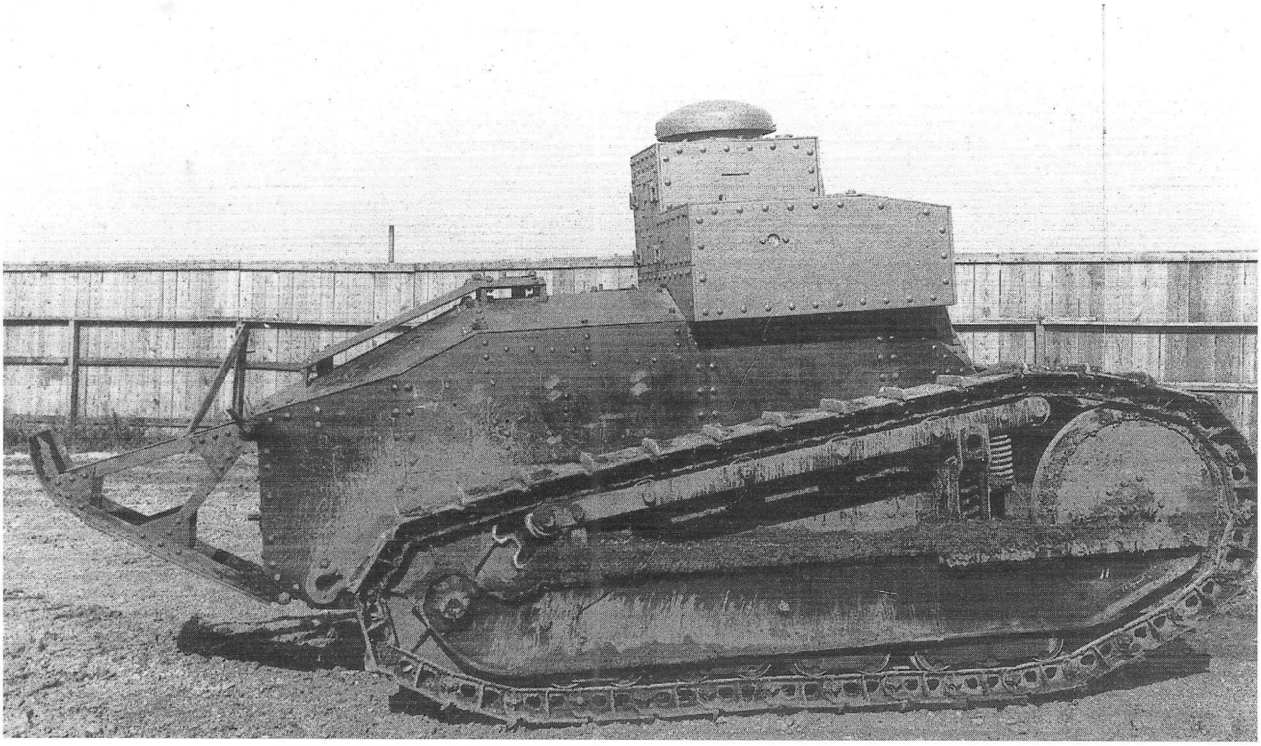
The official trials of the prototype were conducted at Marly on 21–22 April 1917. The Renault vehicle was judged clearly superior to the existing Schneider and St. Chamond tanks. Estienne suggested that some of the tanks might be fitted with a small 37mm gun derived from the 37mm *modèle 16 TR* infantry gun. This would require redesign of the turret. Several committee members felt that the accommodation for the machine gunner was too small and cramped, and would lead to asphyxiation: it would be difficult for a soldier over 5ft 6 in. tall to operate in the turret. On 29 April 1917 Albert Thomas received news of some of the criticisms of the Renault FT from disgruntled opponents of the project, and used this as an excuse to suspend the planned production yet again. He claimed concern that a single soldier could not operate the turret weapon; but his suggestion that another man be added to the turret implied prolonged delays while the tank was completely redesigned. He had also heard that some observers wanted the tank to carry 10,000 rounds of machine gun ammunition instead of the 1,820 allowed in the current design!

Estienne and Renault—who was already gearing up to produce the tank—were furious over the decision. During the course of the trials the Nivelle offensive had been launched on the Chemin des Dames, and it was an utter failure. Estienne was even more convinced of the need for masses of light tanks to overcome the trench war stalemate. Thomas, a prominent socialist and a correspondent for *L'Humanité*, was invited to Russia to celebrate the overthrow of the Tsar and the accession to power of Kerensky's socialist Provisional Government. While Thomas was out of France, Estienne staged another series of trials for the benefit of a number of officers who had fought on the Chemin des Dames during the first French tank actions on 16 April 1917. Their enthusiastic reaction to the Renault FT convinced even Gen. Mourret that it had reached a sufficient stage of development for production, and Thomas's orders were again revoked. It was also decided that of the 1,150 tanks on order, 650 would be armed with the new 37mm gun and 500 with the 8mm Hotchkiss machine gun. By the time that Thomas returned to France, repercussions from the Nivelle offensive prevented further interference in the Renault FT tank programme.

Enter Pétain

On 16 April 1917 the French Army launched the ill-fated Nivelle offensive on the Chemin des Dames. As mentioned earlier, this battle also marked the first use of French tanks near Berry-au-Bac. The German Army had learned the lessons from their original encounters with British tanks, and the French *chars* were as unsuccessful as the offensive itself. But the battle had far more profound effects on the French Army than on its infant tank force. The squandering of another 120,000 casualties so soon after the conclusion of the bloody Verdun fighting was too much for the average *poilu* to bear: his fighting spirit had finally been sapped. The failure of the Nivelle offensive triggered a series of disturbances in the ranks of the army, culminating in the great mutiny of 3 May.

In the wake of the crisis, command of the army



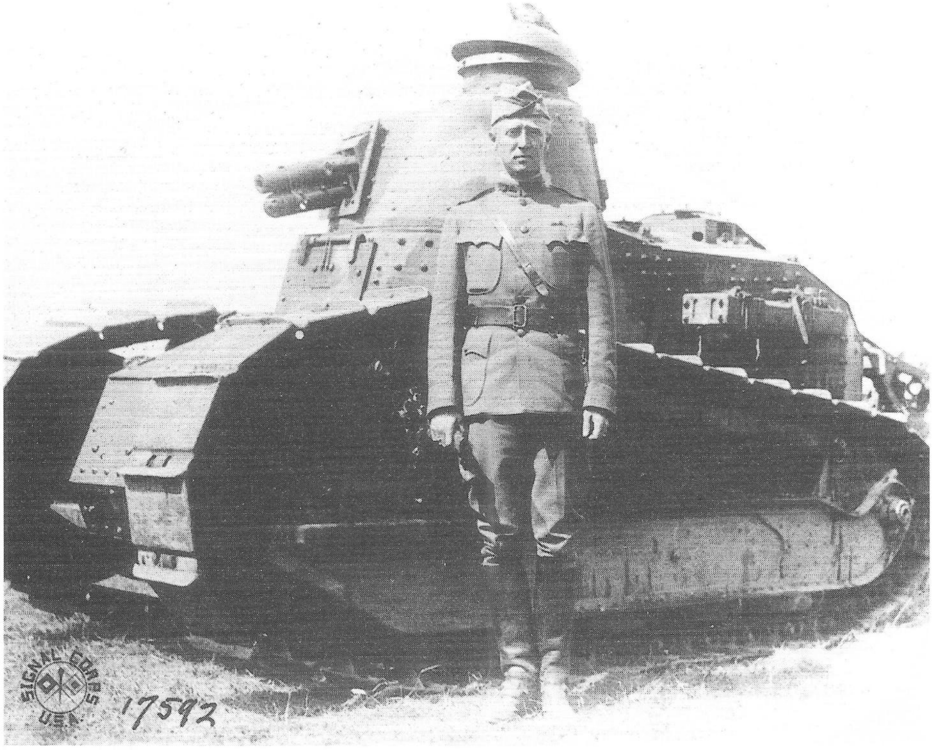
The *char signal TSF* was a radio tank version of the Renault FT, fitted with a *E10ter* radio in a fixed superstructure. They were not overly popular with the troops due to the delicate nature of the radio, and the propensity of the antenna (not fitted here) to become fouled in foliage. This particular vehicle is an American-built example on the Six-Ton Tank chassis.

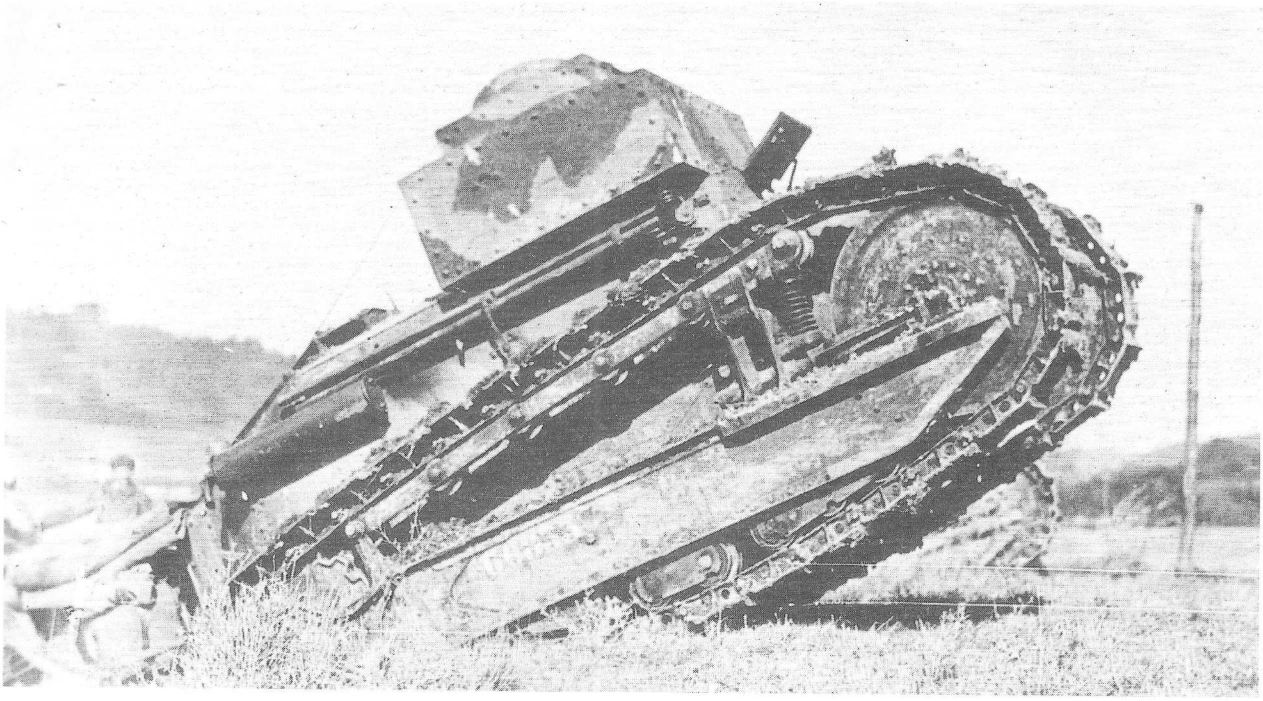
fell to Gen. Philippe Pétain on 15 May 1917. Pétain was of a very different sort from previous commanders-in-chief. Unlike most French officers of the time, he was no disciple of Grandmaison and his obsession with offensive tactics and the mythical *élan vitale* of the French soldier. His tour of command during the Verdun fighting had convinced him of the bankruptcy of Grandmaison's influences, epitomised by the mindless slogan '*L'audace, l'audace, toujours l'audace*'. To Pétain, a more appropriate slogan for the nature of tactics in the age of the machine gun was 'firepower kills'. Appalled by the callousness of many staff officers towards the massive losses of infantrymen, he searched for new tactics to overcome the dominance of defensive machine gun and artillery fire. As a result of the mutiny, Pétain limited the activity of the French Army to a series of small local actions while trying to rebuild morale during the summer and autumn of 1917. Tanks were used on a small scale in several of these operations.

Pétain quickly appreciated that the new tanks, even if they did not live up to the extravagant claims of their advocates like Estienne, were very important morale-boosters for the disheartened infantry. As the French Minister of Munitions later quipped: 'There are two kinds of infantry; men who have gone into action with tanks, and men who have not; and the former never want to go into action without tanks again.' Pétain was not overly concerned with Estienne's promises that tanks would provide the key breakthrough weapon: he viewed them as the glue to hold together his disheartened troops, and a means to help revive their fighting spirit.

Pétain listened with interest to Estienne's new ideas, like the 'bee theory'. Estienne argued that the loss of surprise after the British use of tanks in 1916 meant that tanks would inevitably be confronted by artillery. The Schneider and St. Chamond tanks were too thinly armoured and too big to survive in a duel with artillery: no tank could be constructed which would resist the standard German 77mm field gun. Instead of confronting German defences with impregnable armour, they could be confronted with mass. Five little Renault FTs could be built for every heavy tank—five little 'bee' tanks with five machine guns or cannon were better than

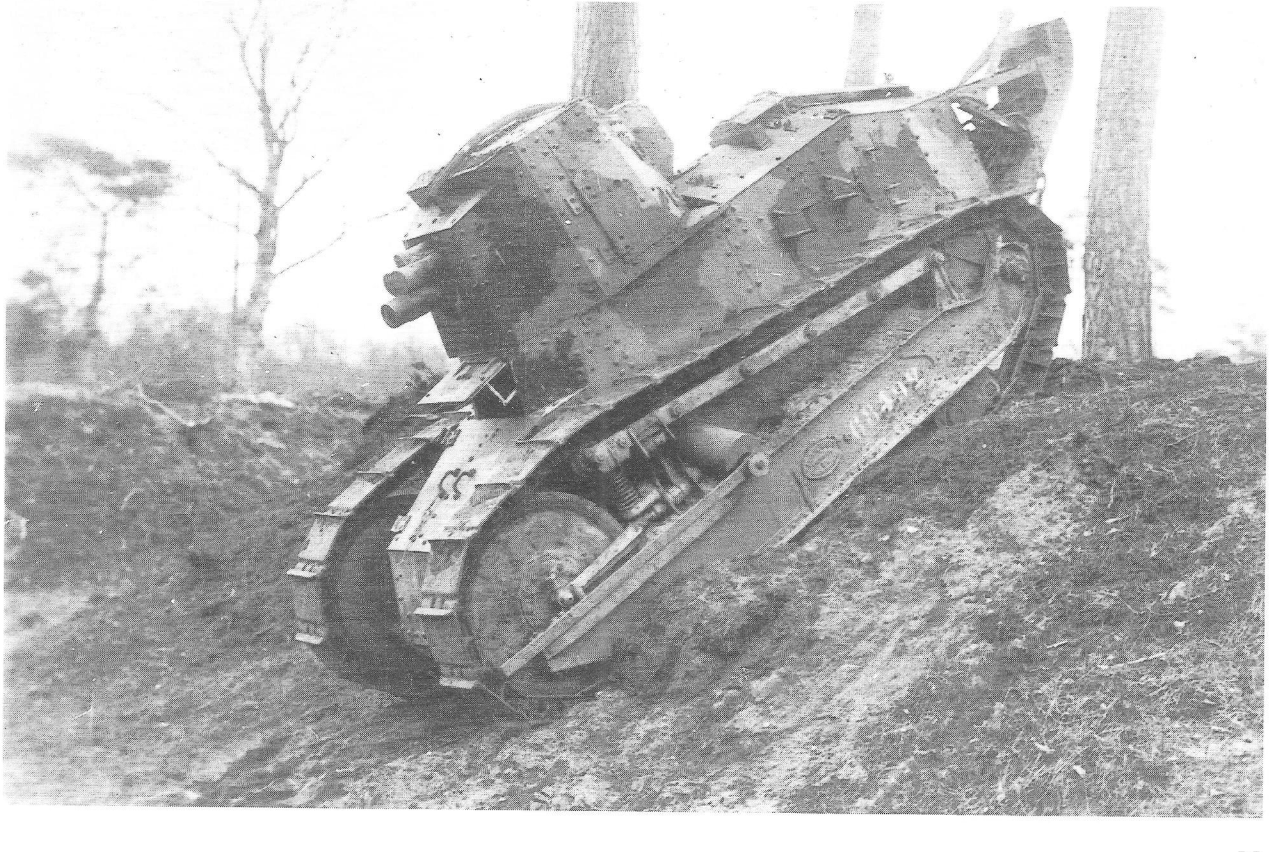
Lt.Col. George S. Patton Jr. commanded the two American FT battalions in the field before being wounded. He is seen here in front of a *char canon* with Girod turret at the Langres tank centre in the summer of 1918. (National Archives)





(*Above*) **A *char signal TSF* of AS 337, 13^{e} BCL, 505^{e} RAS, during the operations in the Argonne Forest on 10 October 1918. The antenna can be seen extending from a mounting on the superstructure to an attachment on the tail. Only three regiments received these vehicles before the war ended. (National Archives)**

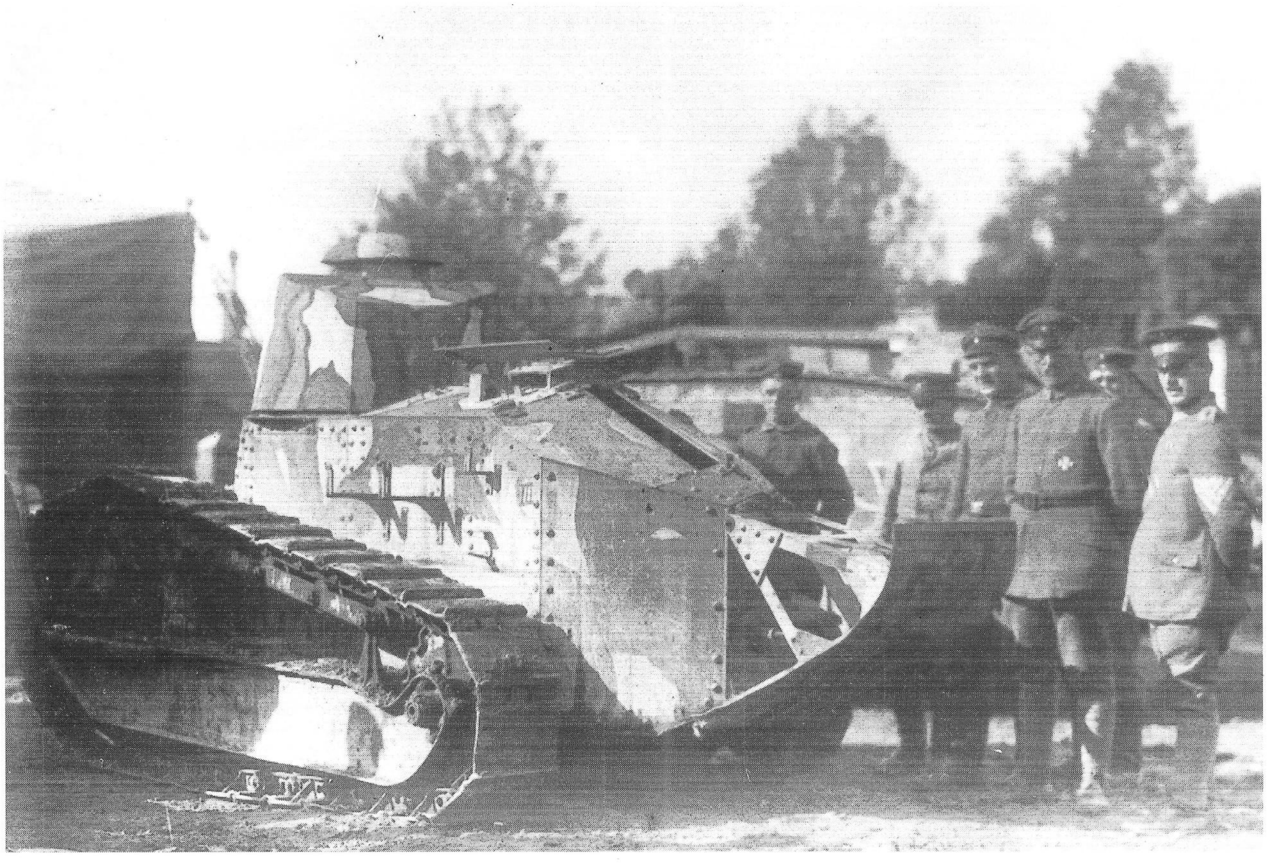
(*Below*) **The Char FT 75BS artillery tank was fitted with a 75mm Blockhaus Schneider '*petoire*' howitzer. It also had attachment points and other fixtures to permit the use of an Orthlieb four-metre bridge for trench crossing. It was planned to add one Char FT 75BS to each tank section, bringing it up to six tanks, but they appeared too late in the war to have much effect.**



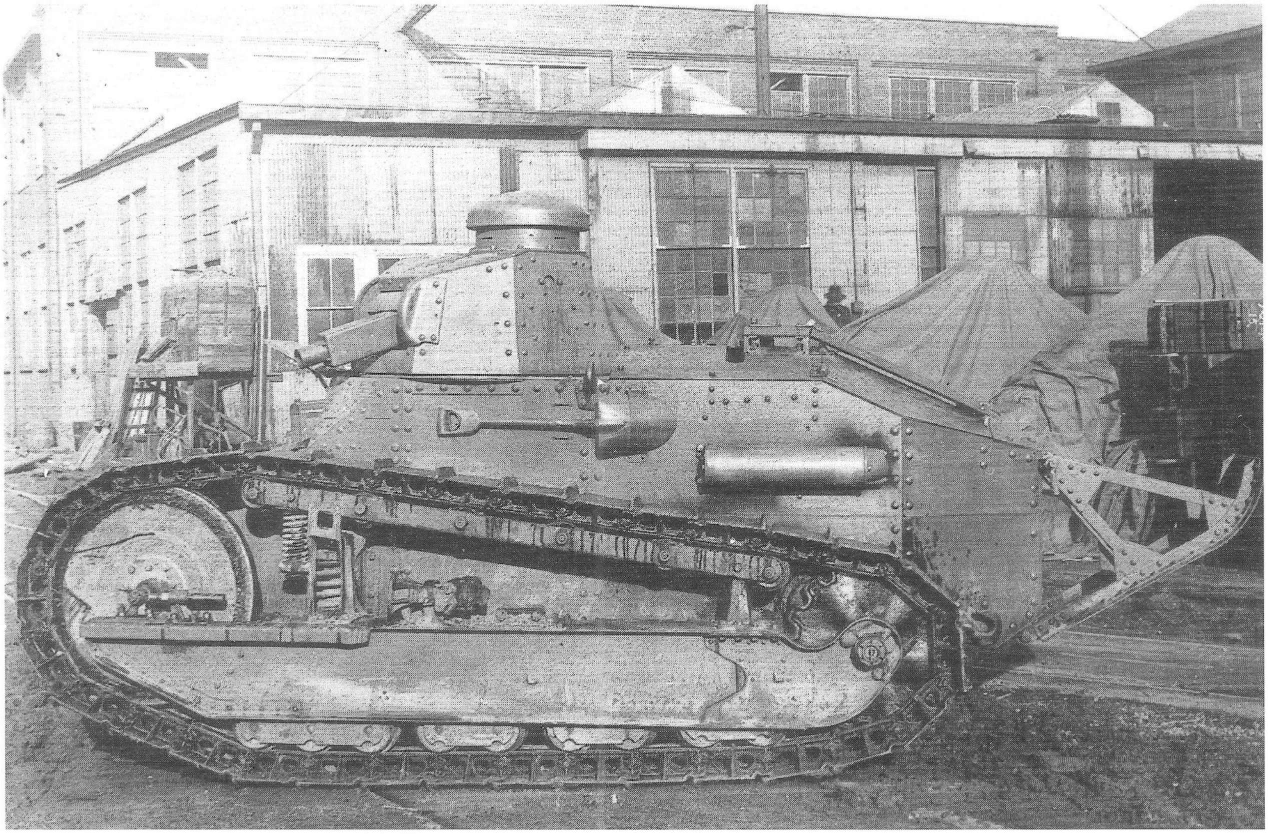
a single big St. Chamond with one gun and five machine guns, and far less vulnerable. The FTs would be much more difficult targets due to their small size, and 'bee swarm' of FTs would overcome the small number of German guns by weight of numbers. Pétain heartily endorsed this notion, and on 20 June decided to increase the number of FTs ordered from 1,150 to 3,500 at the expense of proposed new medium tanks; he viewed this as an essential factor in his efforts to restore the French Army. He made his troops a promise: there would be no major offensive until the Americans and the new tanks arrived. The new Renault FT tanks would be held back until enough were ready for a massive offensive in the spring of 1918.

Into Production

The many delays and bureaucratic obstructions were reduced by Pétain's arrival as commander-in-chief. After further debates with Pétain, Albert Thomas was relieved as Minister of Armaments on 12 September 1917, and his place taken by Louis Loucheur. There were still formidable industrial problems, however. Renault proved unable to cope with the expanding number of orders, and so Louis Renault agreed to waive any production patents and encouraged the Ministry to extend production to other factories. These eventually included Berliet, Schneider's SOMUA facility and Delaunay-Belleville. In addition, it was proposed to include American (and later Italian) factories. Plans and a single tank were dispatched to the US in September 1917 with the aim of producing 1,200 more Renault FT tanks for the French Army as well as sufficient tanks for the US Army. As of 1 December 1917, the total production order was expanded to 3,100 tanks with the omnibus turret (1,950 37mm gun, 1,150 machine gun); 700 tanks with a 75mm BS short howitzer; and 200 TSF radio tanks. On 17 February 1918 the totals were again shifted, to 1,000 machine gun tanks, 1,830 37mm gun tanks, 200 TSF radio tanks, and 970 tanks with 75mm BS howitzer or other types to be decided. By October 1918 the total orders had been raised to an



The Germans captured a number of Renault FTs; this one appears to have had a false turret added. So far as is known, no German tank units actually used captured FTs during the war. (National Archives)

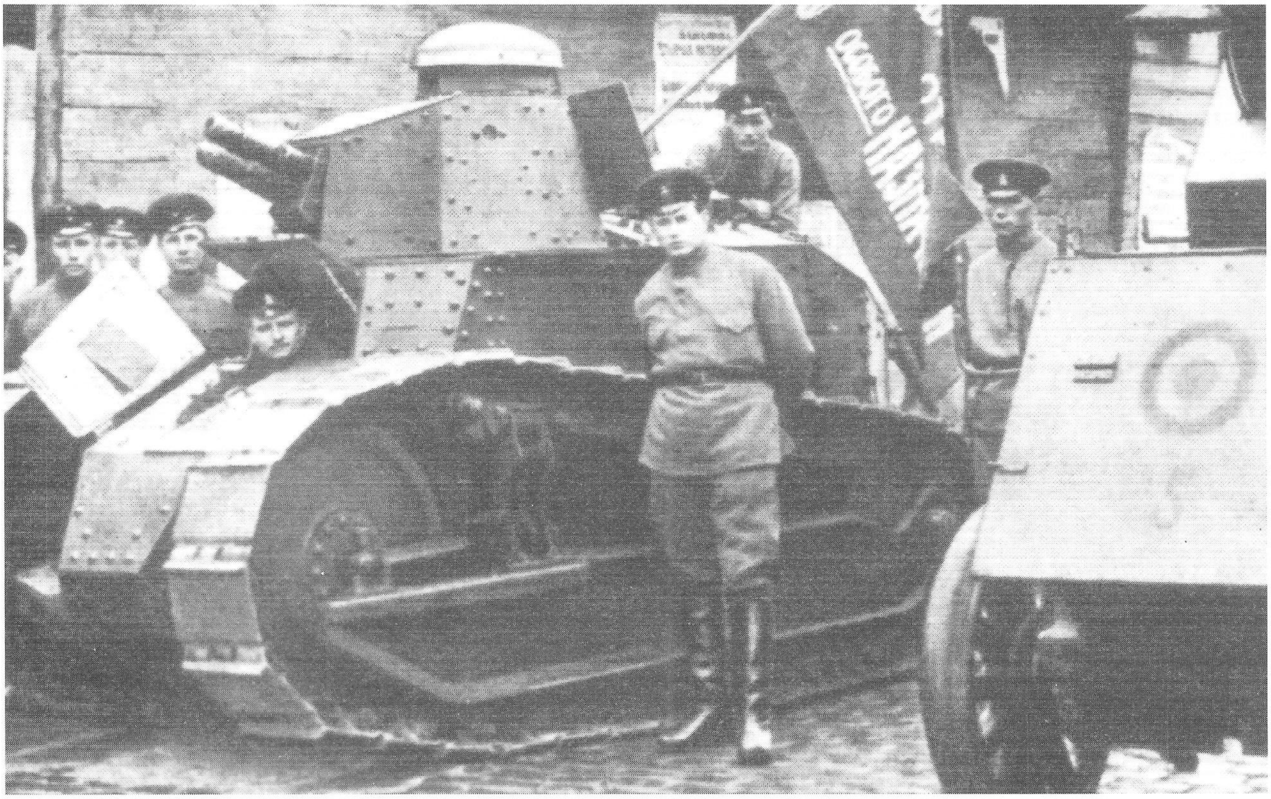


The American version of the Renault FT was called the Six-Ton Tank M.1917. It had a number of detail differences from the French vehicles, such as the exhaust muffler on the left side and the shape of the cover for the machine gun. The American machine gun tanks were first fitted with .30 cal. Marlin machine guns, and subsequently with the Model 1919 Browning. (National Archives)

astounding 7,820 tanks in France alone. The factory breakdown was as follows (October 1918 orders in parentheses): 1,850 (3,940) tanks from Renault, 800 (1,995) from Berliet, 600 (1,135) from SOMUA, and 280 (750) from Delaunay-Belleville.

One of the main design problems was the turret. The new, second-model cast turret with a mushroom cover for ventilation was suitable only for machine gun armament, and proved very difficult to manufacture. A small number of these were completed in 1917 before production shifted to a simpler polygonal turret made of sheet armour plate, called the omnibus turret. The advantage of the polygonal omnibus turret was that it could be adapted to mount either the 37mm Puteaux gun, or the 8mm Hotchkiss machine gun. In 1917 Renault produced only 84 tanks, which was considerably behind schedule. Eventually a new, round omnibus turret was also developed. The *Aciéries Paul Girod* in Ugine, which manufactured the cupolas for Renault, produced this turret. Two experimental round omnibus turrets were developed as one-piece castings, but the standard production type was fabricated from cast and forged pieces. Girod began producing round omnibus turrets in 1918, and the tanks built at Renault in 1918 used both types of turrets. Girod also supplied the round turret to the other FT manufacturers.

Deliveries of the first Renault FT *char léger* (light tank) were further delayed by problems in the supply of armour plate, some of which came from Britain, and in the supply of armament, especially the new 37mm gun. Nearly three-quarters of the first tanks were found to have serious defects; often, these had to be returned to the factory for correction. There was a serious shortage of spare parts, especially at unit level. Many of the first units were hobbled due to two seemingly minor problems, the poor quality of the fuel filters and the fan-belts. For example, in July 1918 ten per cent of the tanks in the 503^{e} Régiment were immobilised due to broken fan-belts. Both problems continued



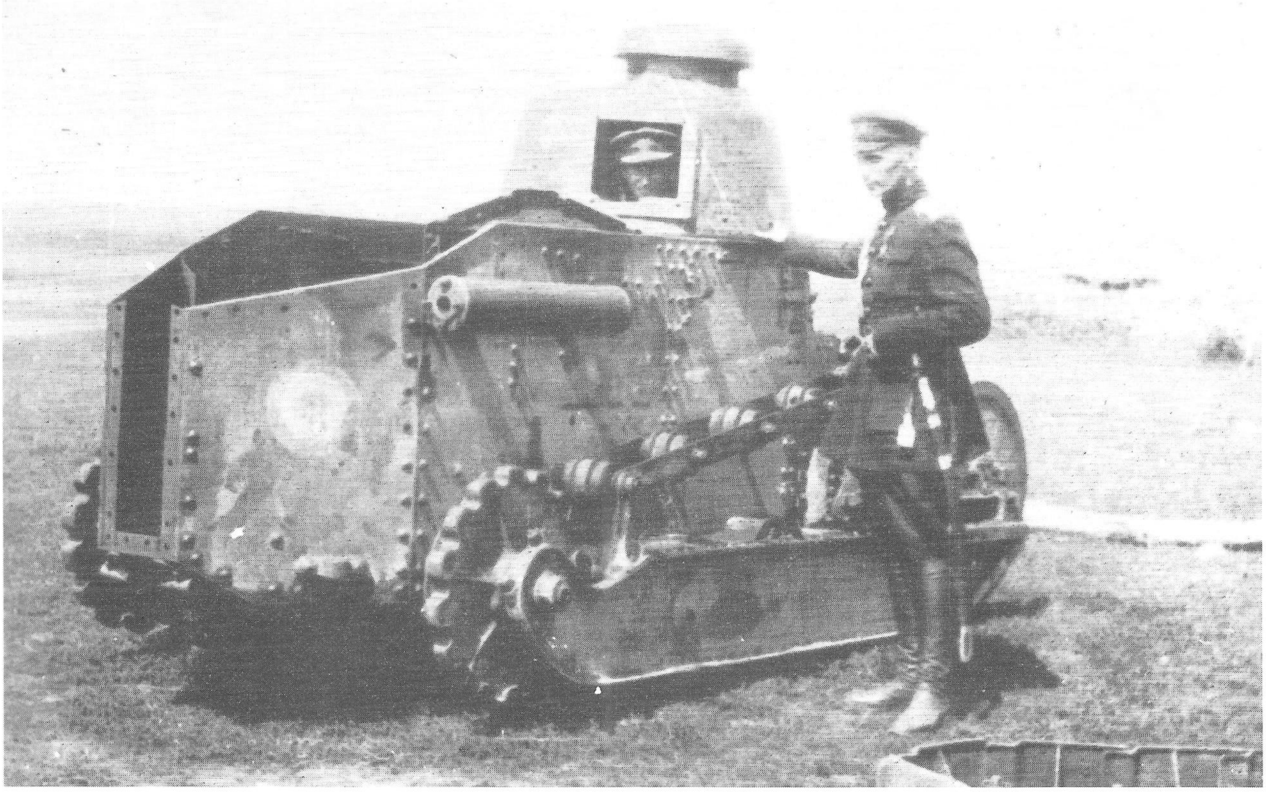
The first Soviet tanks were a number of Renault FTs captured from the French unit AS 303 near Odessa in 1919. This is one of the Renaults of the Special Purpose Armoured Troop, alongside a Peerless armoured car in Kharkov in 1919.

to plague the Renault tank until the Armistice, ameliorated only slightly by greater availability of spare parts in the later months of the war.

By February 1918 there were still only 108 Renaults at the main training ground at Champlieu, and none had armament. By the beginning of April some 453 tanks had been delivered from the factories, of which 43 were combat-ready, 122 were unarmed and being used for training and 248 were sitting at Chalais-Meudon waiting for army acceptance testing. The first light tank battalion, the 1e BCL (*Battalion des chars légers*) was formed, without complete equipment, on 18 February 1918. On 21 March it received a full complement of 75 tanks, but without armament. Two more companies were formed in March, but without tanks.

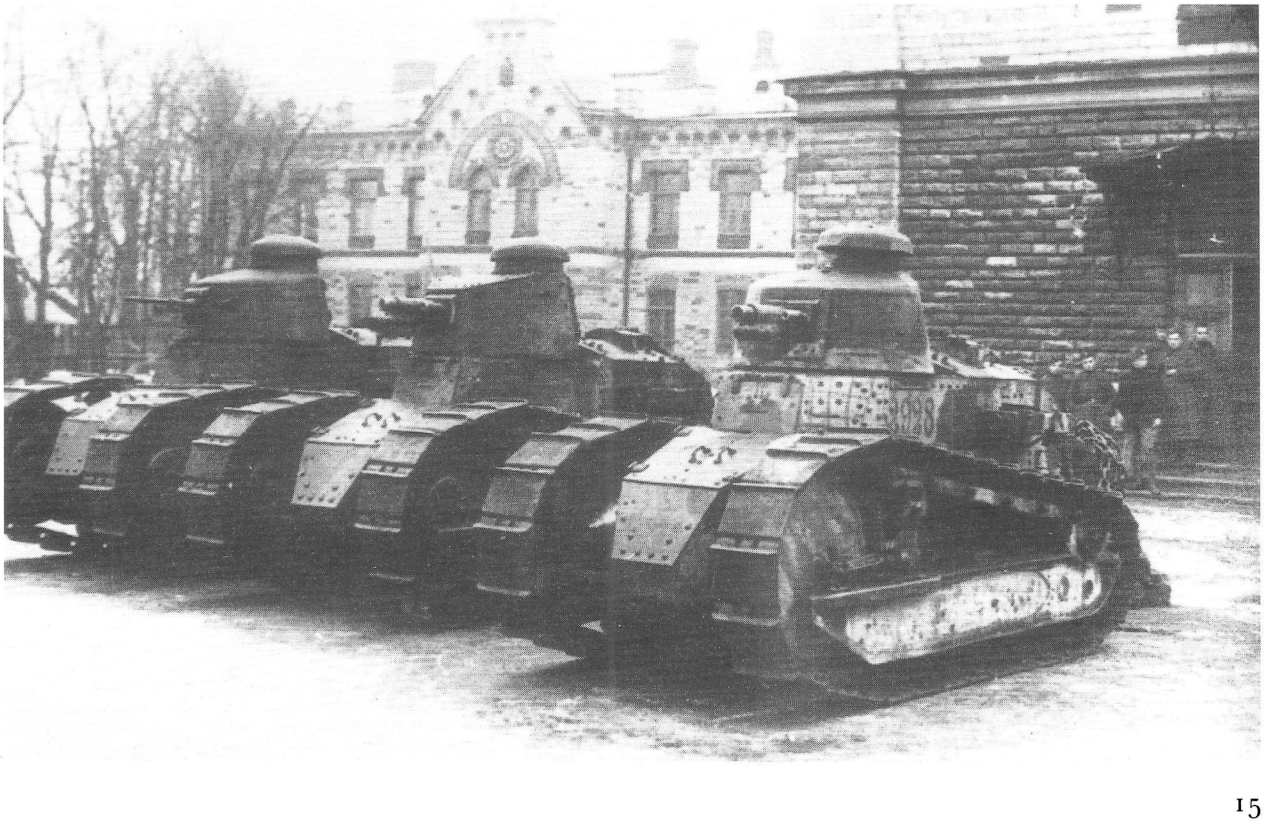
Unit Organisation

The tank battalions consisted of three tank companies and numbered 75 tanks at full strength. The original plans called for a battalion to be made up of 30 37mm gun tanks, 41 machine gun tanks and 4 TSF radio tanks; this mixture was seldom matched in practice. The TSF radio tanks did not begin arriving until July, and there was a shortage of machine gun tanks. The tank companies had a headquarters (one TSF tank in theory, a 37mm gun tank in practice); three sections with five tanks (three 37mm gun tanks, two machine gun tanks); a reserve echelon with five replacement tanks; a supply and recovery section with three tanks (two gun, one machine gun); a company workshop, and a transport detachment. This accounts for 72 of the 75 tanks in the battalion; the remainder were in battalion HQ or reserve. Later, the companies were issued no reserve tanks, and a battalion reserve of about 25 tanks was retained under central control; these were sometimes used to form a provisional company during the fighting. The nominal organisation of the tank units quickly fell apart in combat due to the high level of attrition. It was not unusual for a unit to lose half its strength in a single day of fighting (mainly due to mechanical breakdowns and ditching), and its strength and equipment would vary wildly as tanks were recovered and brought back into action over the



(*Above*) **The White Russian forces under Gen. Deniken operated several Renault FTs, like this knocked-out example. These were apparently left over from the ill-fated French expedition to Odessa in 1919. (Just Probst)**

(*Below*) **In 1919 Britain persuaded Finland to loan three new Renault FTs to the White Russian forces under Gen. Yudenich fighting towards Petersburg. However, they were not used in the fighting and were eventually returned to Finland. (Just Probst)**



The Polish 1st Tank Regiment saw considerable combat against Bolshevik forces in 1920. Due to their prolonged use with little technical support, there were frequent breakdowns. Crews had to become adept at improvised recovery; this vehicle is being used to tow another FT.

(*Above right*) A Polish Renault FT named *Anicia*, photographed after the 1920 fighting. The Polish 1st Tank Regiment was based on the French 505^{e} RAS, and was originally a mixed Franco-Polish unit. (Janusz Magnuski)

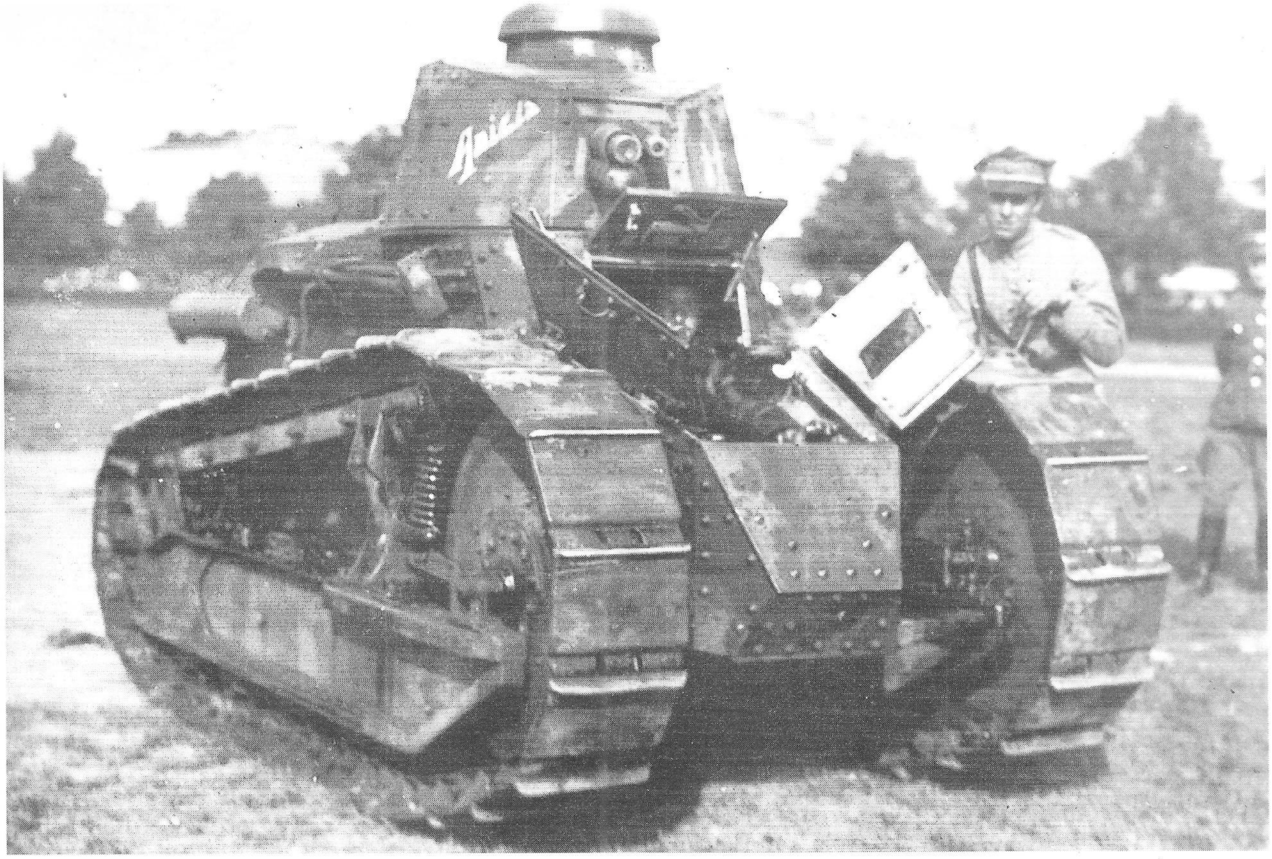
(*Below right*) The Polish CWS Central Truck Workshop built 25 training tanks using Renault components, but with ordinary non-armour steel plate. They were nicknamed *Zelazniak* ('iron-plate') by the crews. (Janusz Magnuski)

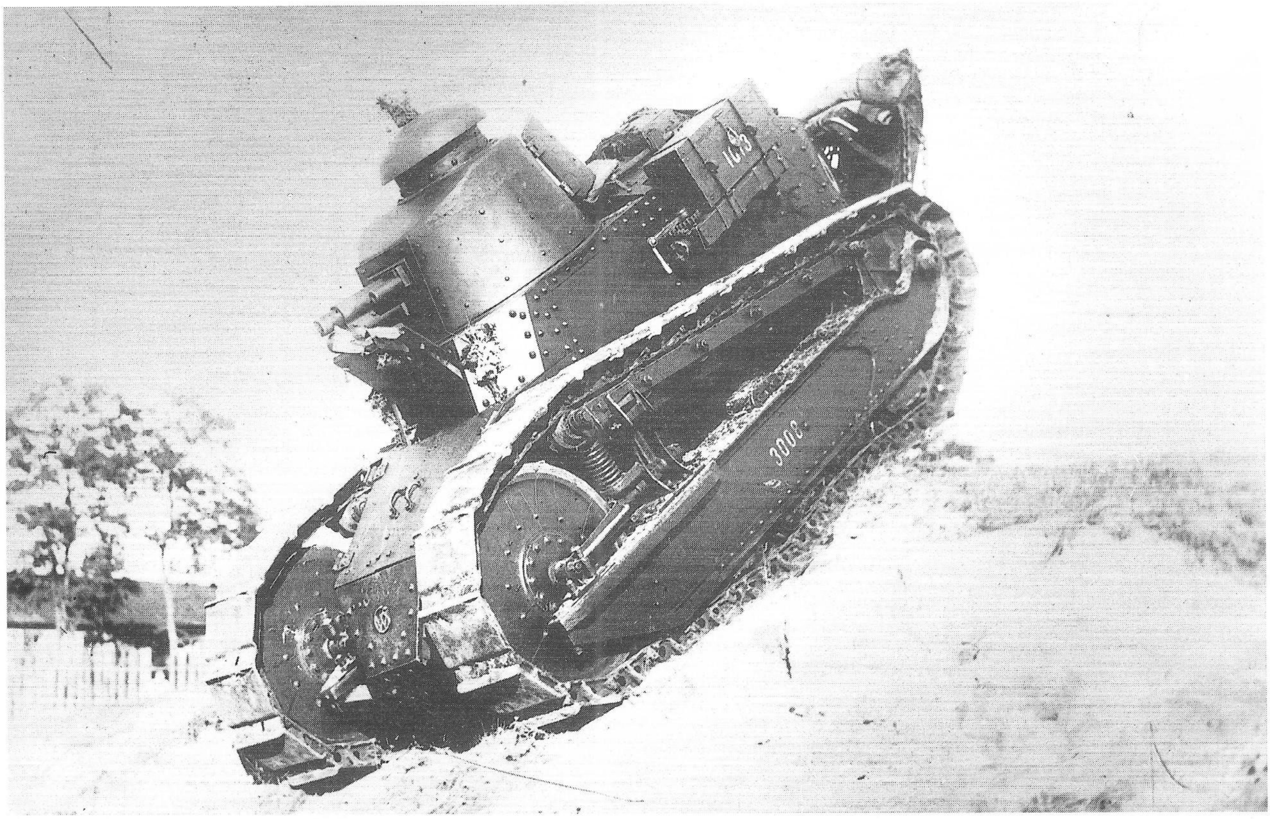
following days. In May 1918 it was decided to form larger units, the RAS (Régiments d'Artillerie Spéciale) which consisted of three battalions plus support units. The first of the new regiments was the 501^{e} RAS, consisting of the 1^{e}, 2^{e} and 3^{e} BCL. Tank companies were numbered sequentially, e.g. AS 301, 302 and 303 being the companies of the 1^{e} BCL.

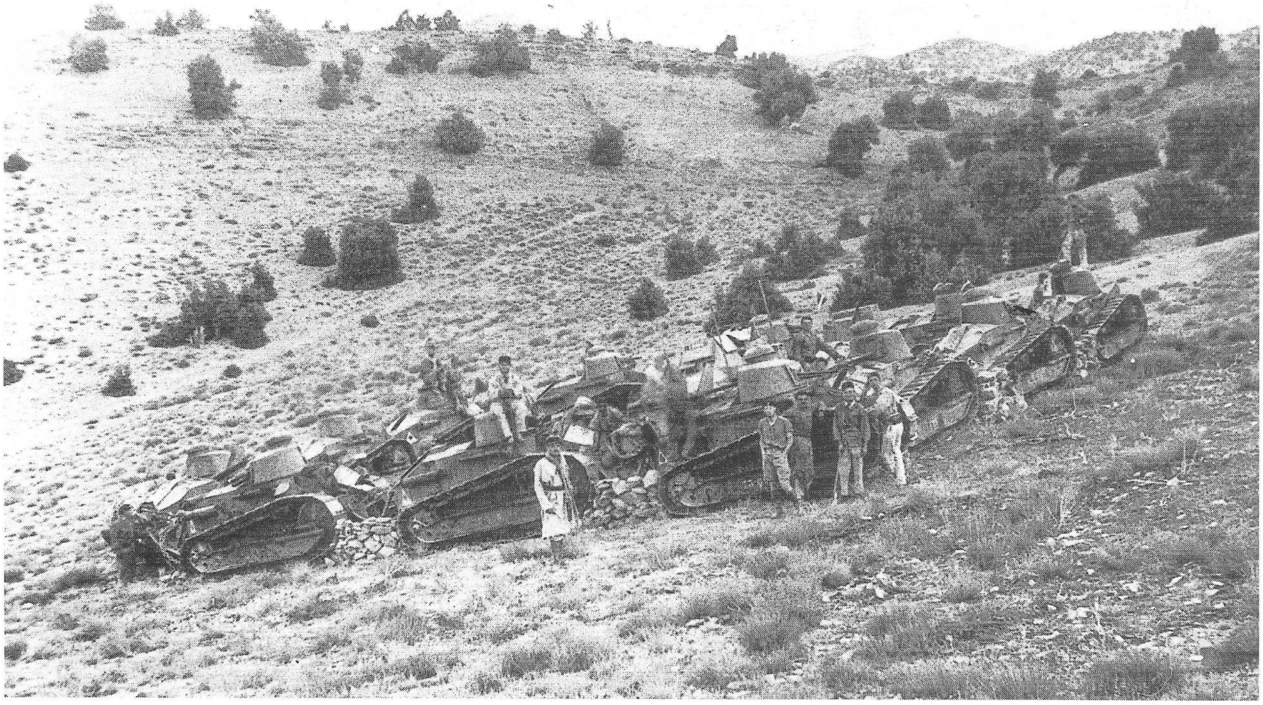
Into Combat

It had been the dream of all the tank advocates, both British and French, to be able to hoard their tanks for one grand onslaught against the German lines. Estienne had prevailed on Pétain to build up a large force of Renaults before putting them into action. Pétain had planned to wait until a strike force of 12 battalions (864 tanks) was built up before committing the Renault FT to action; however, with all the delays, the expectations were whittled down to six battalions, totalling 432 tanks, for 1 May 1918. This was not to be. On 21 March 1918 the German Army launched its great Ludendorff 'peace offensive' on the Western Front, and, the Germans were soon on the doorstep of the main French tank base at Champlieu. The first 37mm guns were not delivered to the 1^{e} and 2^{e} BCL until the night of 23/24 March. The German offensive forced the abandonment Champlieu, and severely disrupted the process of organising and training the first FT units. The month of April was spent trying to get the first three battalions fully equipped and ready for combat.

The first unit committed to action was the 501^{e} Régiment, numbering about 200 Renault FT tanks. The regiment was committed to support the actions of Gen. Mangin's six infantry divisions in an attempt to stave off German attacks towards the







During the Rif War in Morocco, the French made extensive use of light armour for convoy escort, guard duty and infantry support. Here, FT tanks of the 62^{e} RCC form a night-time laager in the Atlas Mountains during the pacification campaigns of the early 1930s. In the centre a Foreign Legion Berliet VUDB armoured transporter can just be seen. (National Archives)

Forêt de Retz on the approaches to Paris. The three battalions were broken up into small groups of 30 tanks or so to support specific infantry attacks. On 31 May 1918 the first Renaults entered combat alongside Moroccan infantry around Ploissy-Chazelle. For the next two weeks the Renaults were used in a series of small local attacks and counter-attacks, sometimes in the dense underbrush of the forest itself

The Renaults proved their worth immediately. Their smaller size and the revolving gun turret permitted their use in forested areas where the French medium tanks or British rhomboids would have been nearly useless. The forested areas were traversed by narrow tracks which would have stopped vehicles any larger. The tanks' presence stiffened the French infantry, even if co-operation between tanks and foot-soldiers was almost uniformly poor. In more open terrain, the tanks were usually able to overcome initial German machine gun nests and install the *poilus* in the new positions. But there were never enough Renaults; nor did the French infantry hold terrain the way they did in 1915 or 1916. The small Renault units quickly became exhausted in both men and machines due to the clamour for their support.

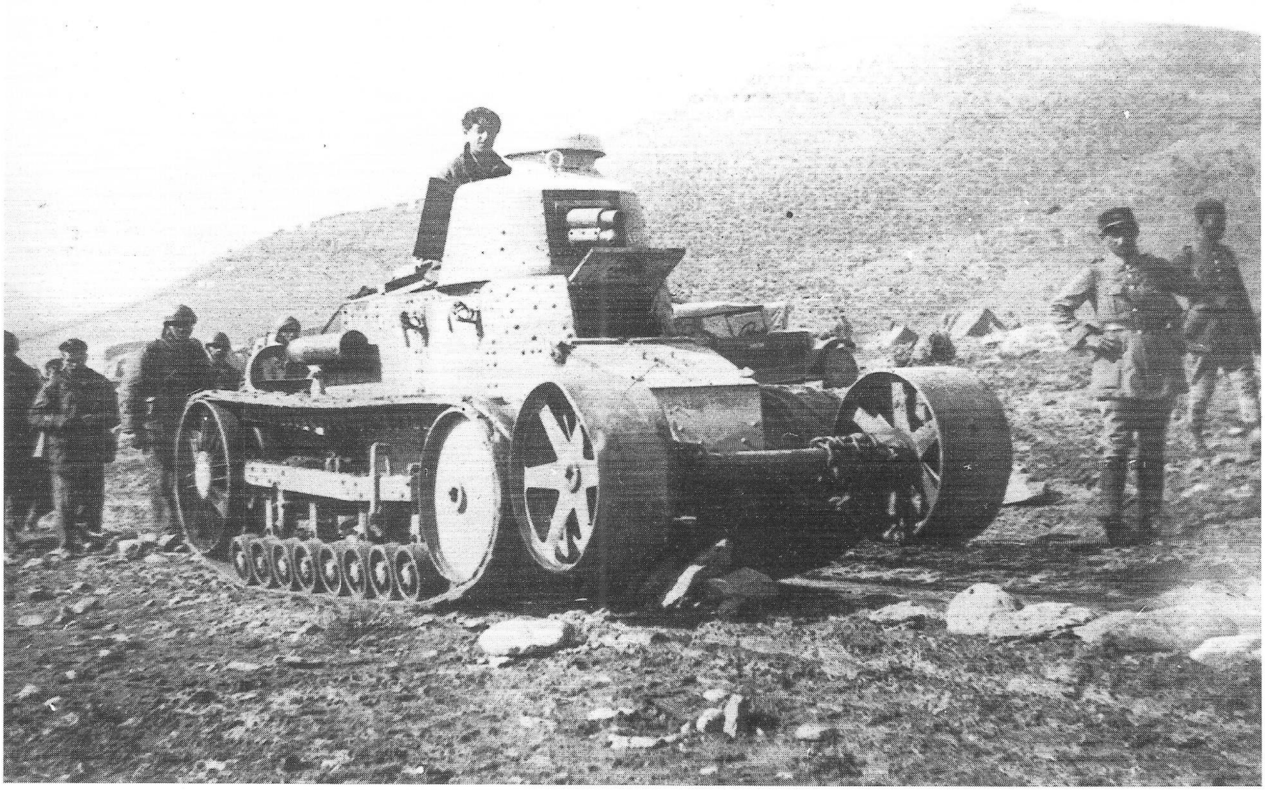
The Renault tank had proven itself from a technical standpoint. It was highly regarded by the troops, and its performance in sustained operations with minimal technical support was miraculous by Great War standards. Its impact on the course of the battle was minimised however, by its use in very small numbers with infantry unaccustomed to working alongside tanks.

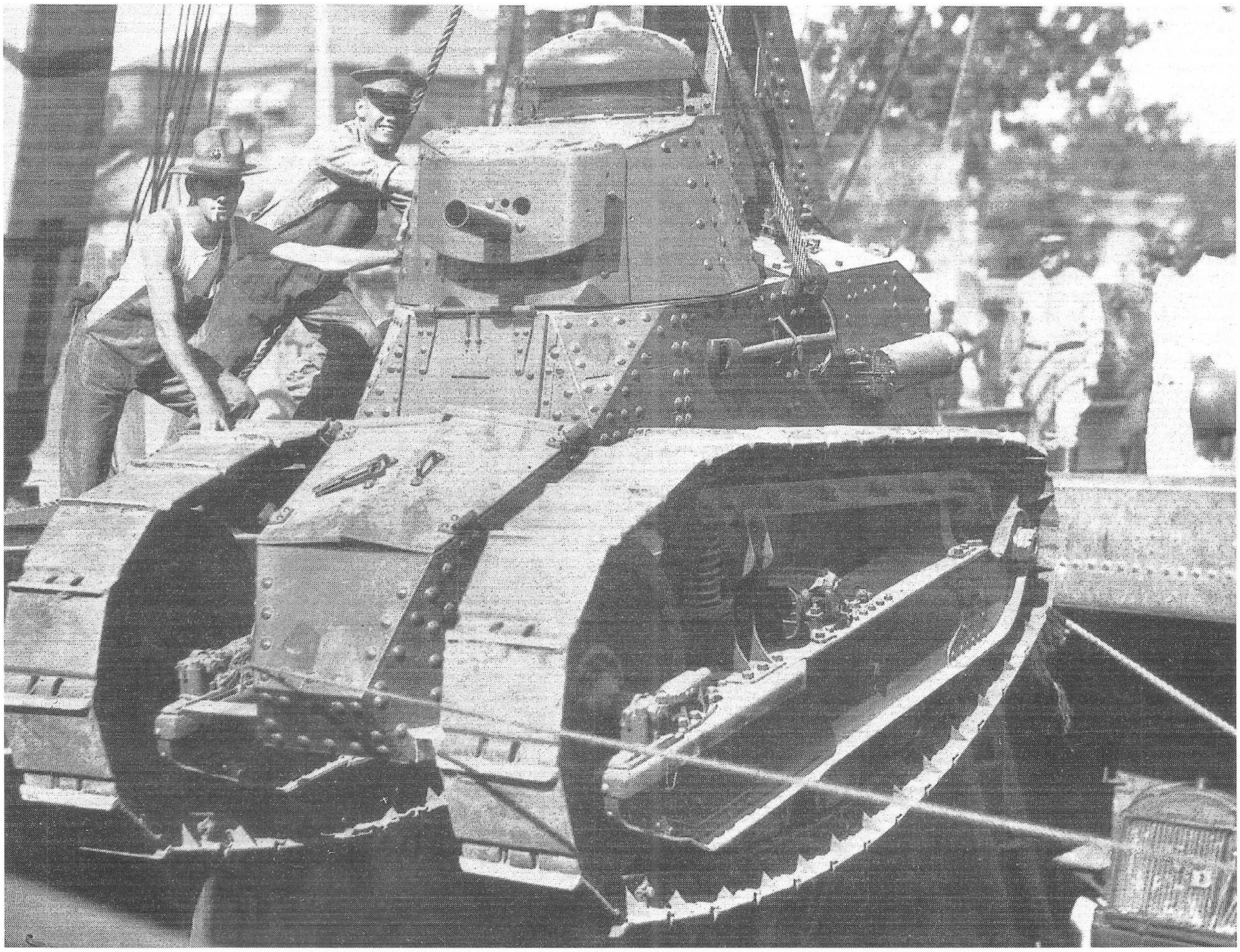
On 18 July 1918 the French Army began its offensive near Soissons, which saw one of the largest commitments of French armour to date, including 245 Renaults, 100 St. Chamonds and 123 Schneiders. The little Renaults were the vanguards of the attack. After passing the first waves of infantry, it was often the Renaults which provided the impetus for the advance. They were the critical ingredient in determining how far and how fast local attacks would penetrate. The advances were often halted only by the lack of fresh infantry to hold on to the terrain seized by the tanks, or to continue to press the attack forward.

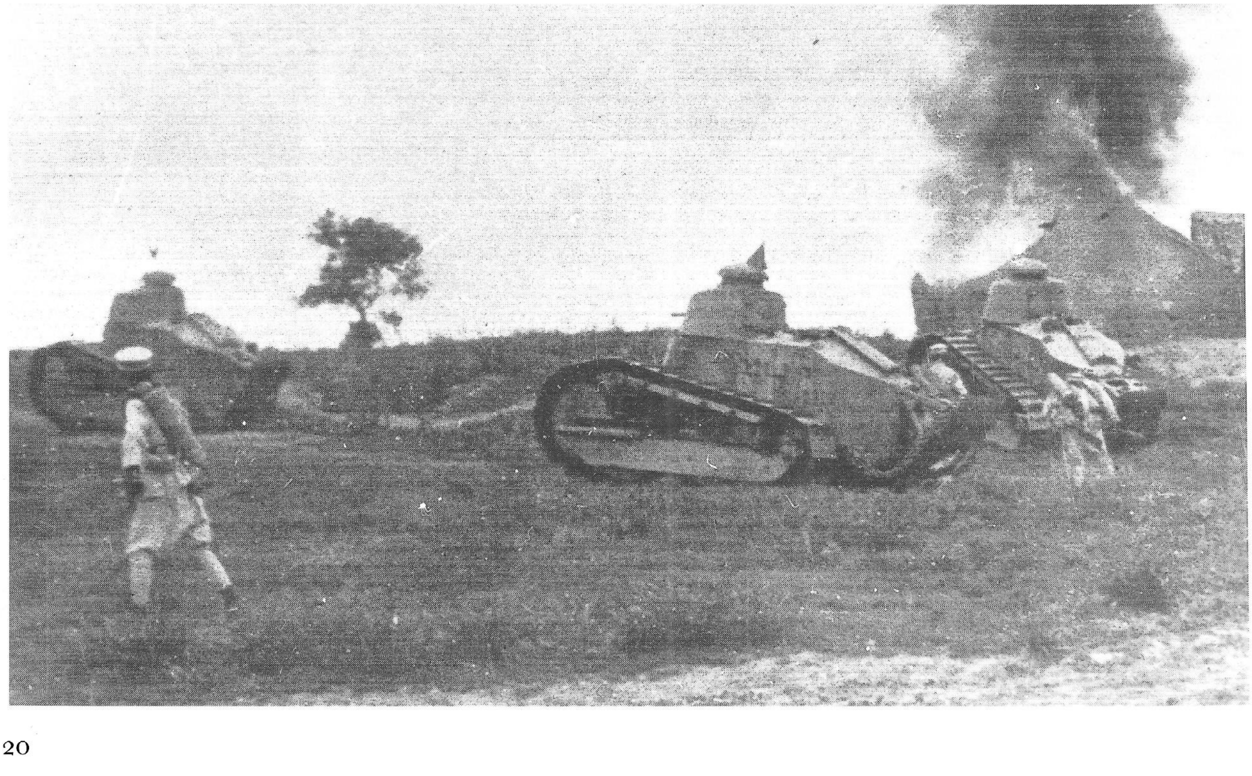
But the real problem was the continued lack of sufficient tank-infantry training. The tank units had trouble enough bringing their units up to full strength, and there was never enough time—or enough tanks—to practice tank-infantry co-operation. Every single operational tank was hoarded for combat use, since training led to their rapid mechanical deterioration. The tanks were good for only a few hundred hours of operation before they required a complete overhaul. Tank-infantry training usually only occurred on the battlefield itself. Few infantry units showed any skill in operating with tanks until their second battle. An American officer later wrote of the Renault tank units: 'Given seasoned divisions trained with and assisted by tanks, nothing can stop them'.

The growing effectiveness and numbers of the French tank units in the summer 1918 fighting led to a number of German attempts to develop tactical improvements to deal with them. The appearance of large numbers of Renaults in the summer fighting heralded the end of the hegemony of the machine gun on the battlefield. In earlier French operations there were never enough tanks to challenge machine gun nests except in narrow sectors. Now, the German tactical response was to begin to fortify machine guns in small concrete pill-boxes. These began to appear in large numbers in the late summer of 1918. They did make it more difficult and costly for the Renaults to overcome the machine guns, since it was usually necessary for a gun-armed FT to approach close enough to fire directly into the gun slit. At such close ranges, the German machine gunners were trained to fire at the vision slits on the Renault; the bullets would not penetrate the Renault's thick frontal armour, but spall knocked off near the point of impact on the inside of the tank could injure or blind the crew.

After the Great War, the French Army experimented with a modified Kegresse suspension with rubber tracks sometimes called the *Modèle 28/29*. Tank Company AS 508 used these experimentally during the Rif War in 1925, but the tracks proved unsuitable for use in such rough terrain. (National Archives)







The pillboxes were an inadequate response to the growing number of Renaults, since the more fluid conditions of the battlefield in the autumn of 1918 made it more difficult to establish elaborate static defence lines. The German Army began to appreciate that a more satisfactory response would be the fielding of a counterpart to the Renault to act as a mobile, protected machine nest. However, the German LK1 light tank was not ready for mass production in 1918.

Field guns remained the principal threat to tanks: of the 440 Renaults lost during the war, 356 were lost to artillery. French tactics stressed the need for artillery-fired smoke rounds to prevent enemy gunners from engaging the tanks at long ranges. However, close co-operation with the French artillery was difficult to achieve. The main advantage that the Renaults had enjoyed over earlier French or British tanks was their small size and greater numbers. They were much more difficult targets to hit, and were faster than either the St. Chamond or Schneider. The German artillery was seldom available in large enough numbers, and so single gun sites could be attacked by several tanks at once. A German soldier wrote of his unit's encounter with American Renaults near St. Mihiel: 'Fleets of small tanks, each armed with a single gun or machine gun, appeared with the rapidity of weasels in and behind our gun positions with this weird rabble spewing up like the spawn of hell'. In the early autumn of 1918 some German units began introducing tactical changes which stressed the need to mass anti-tank equipment into defensive clusters, the aim being to prevent the larger number of tanks from picking off isolated gun sites one-by-one. This practice never became widespread enough to have much effect. Instead, the light tanks became more numerous and dangerous.

(*Above*) In 1927 the US Marine Corps Light Tank Platoon, East Coast Expeditionary Force, was dispatched to China during the turmoil in Shanghai. It was equipped with Six-Ton Tanks, seen here being brought ashore. In the 1920s, the gun mantlet of these tanks was modified by incorporating a shield in front of the gun cover. (National Archives)

(*Below*) A number of Renault FTs were acquired by the warlord Chang Tso-Lin in the 1920s and served in his private Manchurian Army against other warlords. After his assassination by the Japanese, his son permitted the incorporation of the tanks into Chang Kai-shek's National Revolutionary Army. Here they are seen in operation around 1929 in northern China. (National Archives)

Anti-tank rifles did not prove to be a major threat to the Renault, although they could cause penetration at close ranges. It was generally found that the polygon turret was less vulnerable to the AT rifles than the round Girod turrets as the integrity of the flat armour plate was higher. Mines were a serious problem for the small Renaults and could easily blow a tank apart. They were usually of an improvised nature, and not used in large enough numbers to have much effect on tank combat, destroying only 13 Renaults during the war. As far as is known, during the 1918 fighting the Renault never encountered a German armoured vehicle in combat.

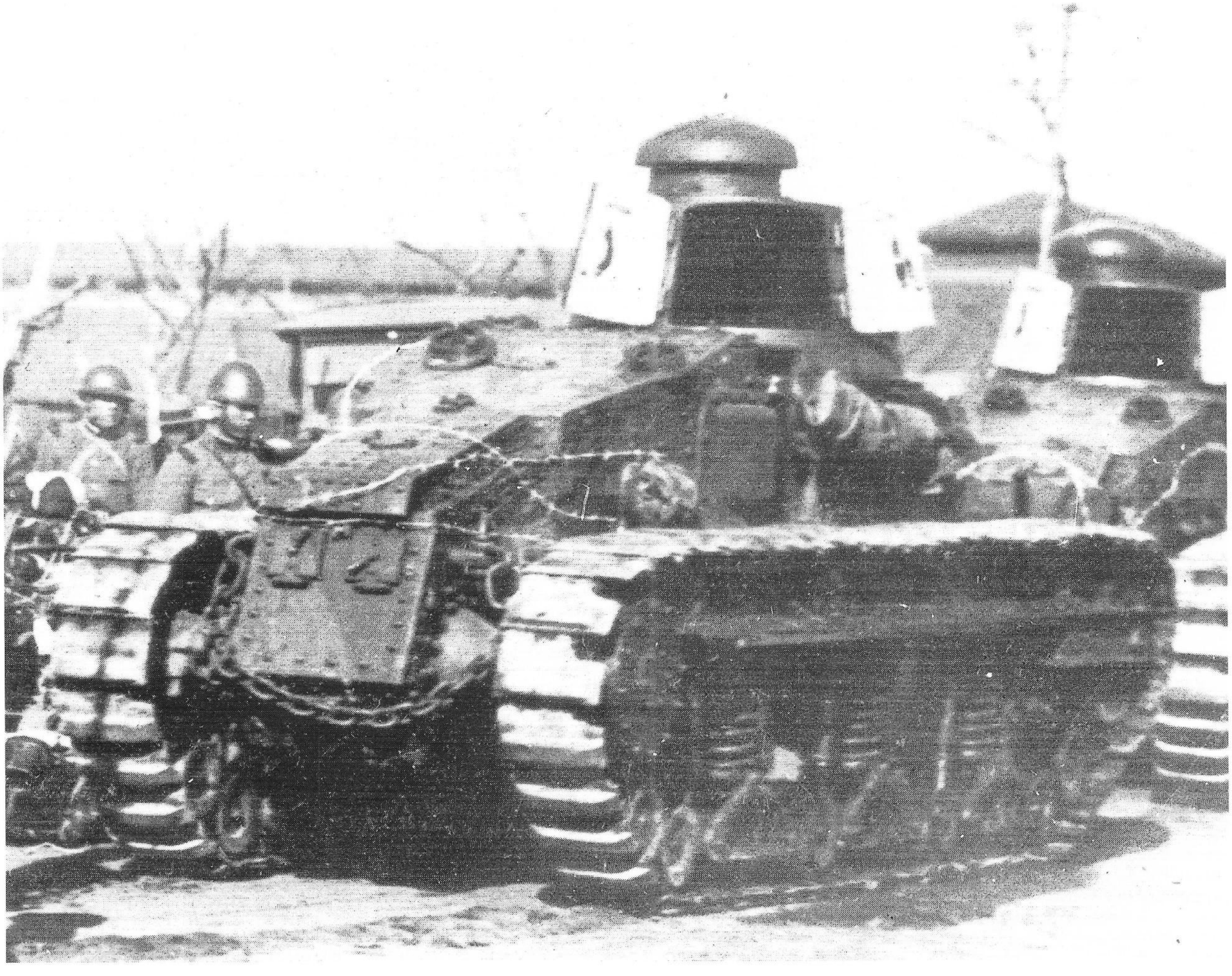
The other main enemy of the Renault tank was the anti-tank trench; far more Renaults were put out of action (temporarily) by trenches than by any enemy weapon. The Renaults were simply too small to cross the wider ditches. Large shell holes also posed a real problem. The French tried to overcome this by both tactical and technical solutions. Renault units were not supposed to be committed to overcome a trench system without supporting engineer troops or specially trained infantry. The infantry or sappers were supposed to break down the trench walls with shovels at a few points to permit passage, but, this seldom worked in practice. The technical solution was to field bridging tanks. In the later months of the war, the Renault units were scheduled to receive a special support version of the Renault tank, armed with a 75mm BS '*petoire*' short howitzer. This support tank was also fitted with attachment points to permit it to carry a small bridge on the front which could be laid over anti-tank ditches. The war ended before this programme could be put into action.

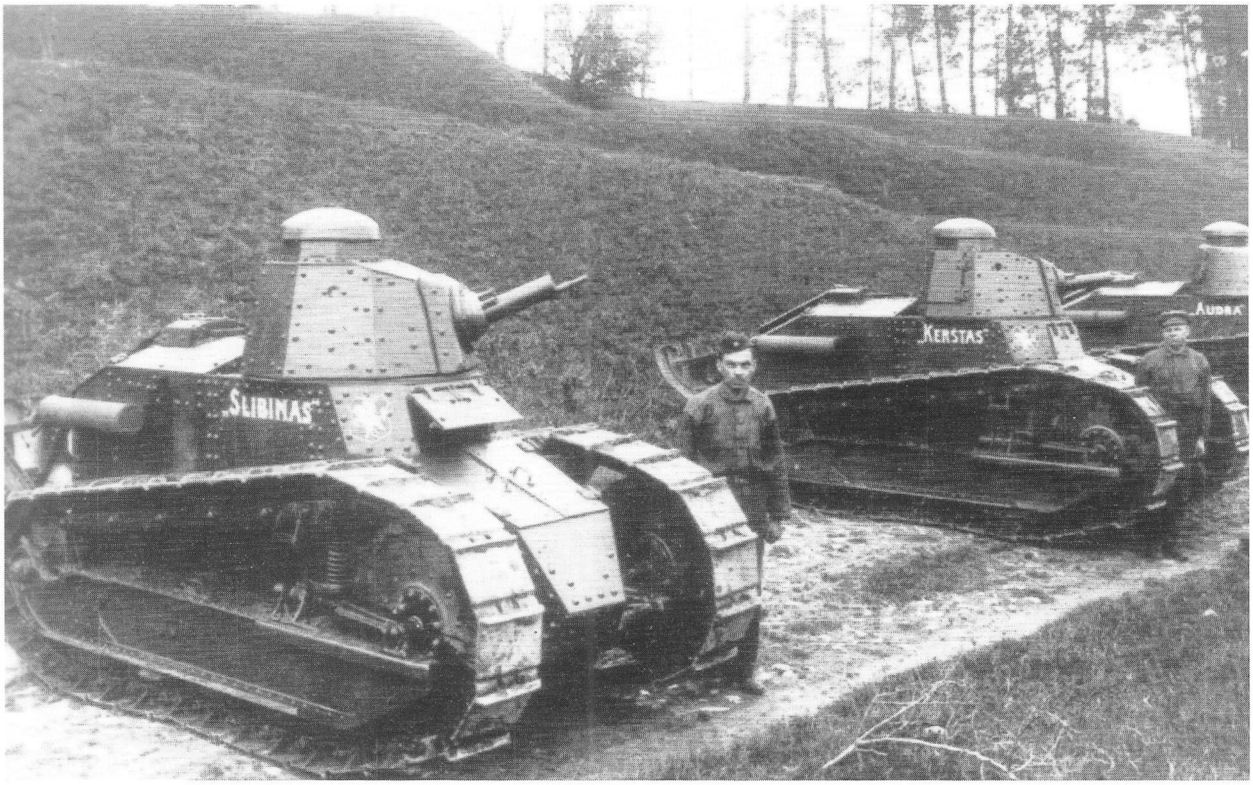
Mechanical problems stopped more Renaults than any other cause but trenches. The fan-belts were a constant headache right up to the end of the war. In one action, an American Renault FT company used up more than one new fan-belt per tank in less than a day. The problems were caused both by the poor quality of the belts and by driver inexperience; the belts could be broken if the engine was suddenly revved up too fast, or could snap after a cold start. After prolonged use, they tended to swell and begin to slip. This was an all-to-frequent occurrence which led to even more serious problems: if it went unnoticed by the driver, the engine overheated, the engine cylinders jammed or broke the piston rod, and eventually the crank case could be split. No technical solution for the problem was found during the war aside from careful driver training and frequent belt replacement. The dire consequences of this seemingly minor problem highlight the basic immaturity of the automotive technology on which the early tank was based, as well as the exhausted state of the French war industries.

Rejuvenation of the Assault Artillery

By the late summer of 1918 the Renault FT was finally becoming available in large numbers. By August over 2,000 had been delivered, and the pace of production was increasing. Two more regiments were formed in June, and one each in July and August. By September there were 21 French and two American FT battalions. The American battalions were supposed to be equipped with US-manufactured light tanks; however, these were not yet available, and so the French Army agreed to provide equipment for three light tank battalions. The initial commander of the US tank battalions was Lt. Col. George S. Patton. (Interestingly enough, the commander of the tank training centre in the United States was another officer who would become famous in the Second World War—Lt. Col. Dwight Eisenhower.) The Renaults were involved in ten battles after the Soissons offensive, usually in company or battalion strength. The next major employment came on 28 August 1918, when seven battalions from the 502^{e}, 503^{e} and 505^{e} Régiments

Japan acquired a number of Renault NC 27 export tanks, which were a modernised version of the FT. In Japanese service they were known as the Type 89 Etsu B, and are seen here during the fighting near Shanghai, China, in 1931. (National Archives)





Lithuania purchased 12 FTs in 1923, arming them with a Maxim machine-gun. These tanks served in the tank battalion at Radviliskis in the 1920s. (Just Probst)

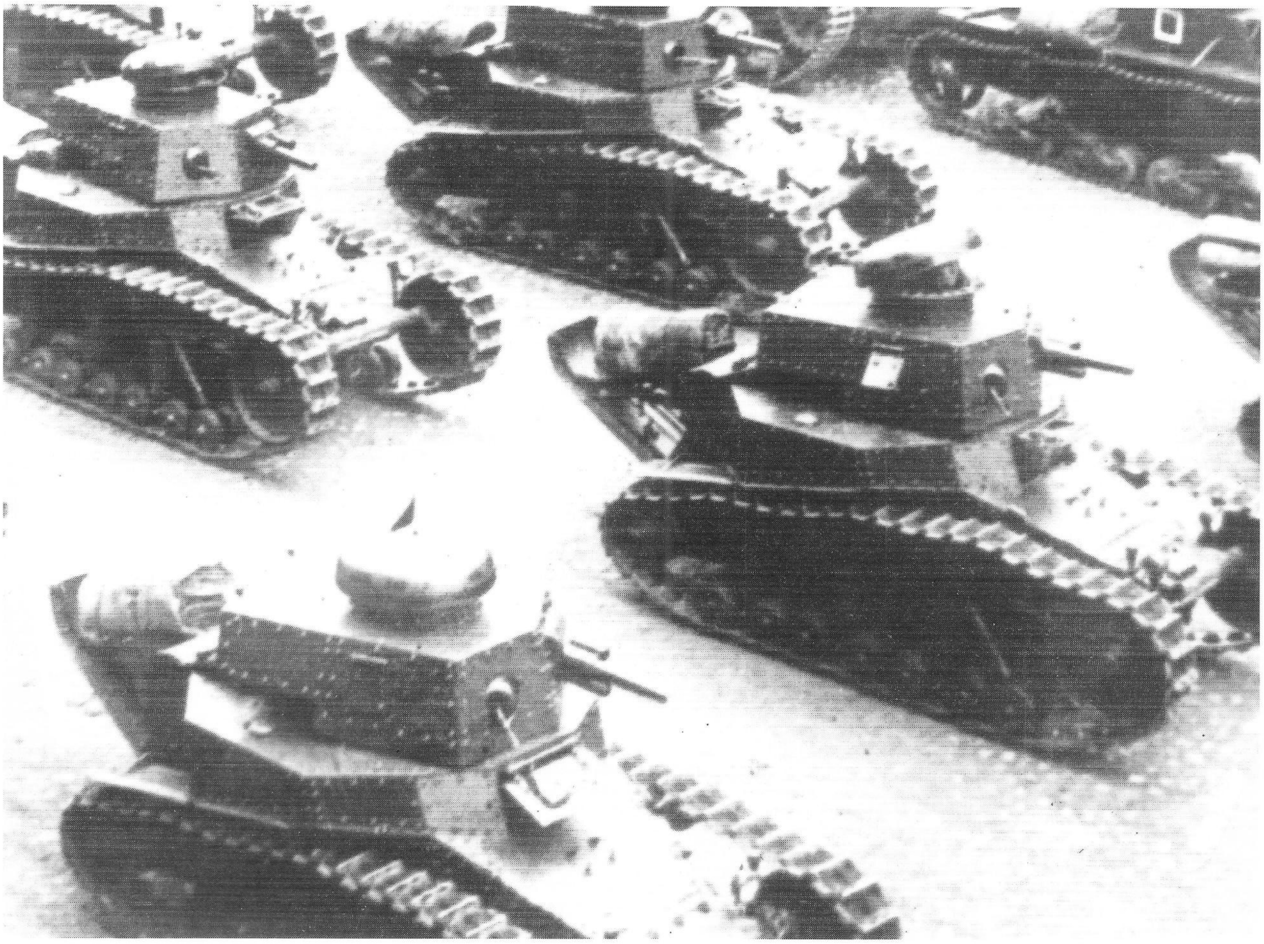
were used to support the French Tenth Army around Crécy-au-Mont/Crouy during five savage days of fighting. Coinciding with British actions in Flanders, the fighting pushed the Germans back from the last scraps of territory won during the Ludendorff offensive.

What was significant about the summer fighting was not so much the territory regained as the changing tactics. The stalemate of the trenches was finally ending. Machine gun nests could be readily eliminated by the tanks, permitting the infantry to advance relatively unhindered for distances that would have been unimaginable in 1916 or 1917. The attacks were not necessarily preceded by heavy artillery bombardment, since the resulting craters hindered the passage of tanks.

The American Renaults

The American 344th and 345th Battalions were first blooded in the fighting near St. Mihiel on 12 September 1918. Their real trial-by-fire came later in the month during the Meuse-Argonne Forest battles which began on 26 September and dragged on through 1 November 1918. The American tank battalions were supported by three French battalions, making this operation one of the largest involving the Renault FT during the war. Throughout the fighting, only French-built tanks were used.

The US Army received 514 Renault FTs during the course of the war. The American tank production programme never had any impact on the fighting due to persistent delays. Four Renaults and a set of plans were shipped to the US in 1917, but the plans had to be converted from their metric measurements in order to use US machine tools. In addition, the early versions of the Renaults shipped to the US were virtually hand-built, with many small variations in design. Not all of the bugs had been worked out on the Renault, and so there was a constant stream of changes coming from the French factories. The American-built Renault, codenamed the 'Six-Ton Special Tractor,' differed in many small details from the French original. A bulkhead was added between the engine and crew compartment, and a self-starter was added to the engine.



The Soviets built the MS-1 light tank—later called the T-18—in 1928–31, based on the Renault FT design. Unlike the FT they were armed with both a 37mm cannon and a separate machine gun. Some were still in service in 1941. (National Archives)

The Renault 18CV engine proved impossible for US firms, and so a Buda engine was adopted in its place.

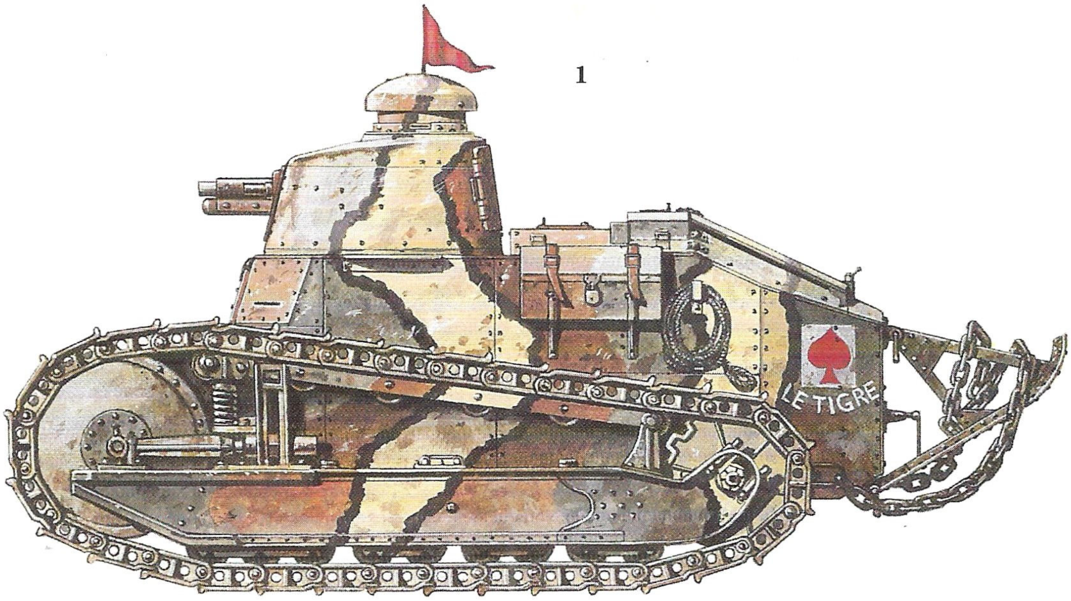
The US government ordered 4,440 'Six-Ton Tanks Model 1917' from three assembly plants: the Van Dorn Iron Works, Maxwell Motor Company and C. L. Best Tractor Company. The first tank was not completed at the Van Dorn Iron Works until October 1918, and 64 were finished by the end of the war. Ten had been shipped to France and arrived before the Armistice, but not in time to see any fighting. By the end of 1918, 209 had been completed, and it was decided to finish a total of 950 tanks based on the supply of finished parts and other material on hand when the war ended. These were completed in 1919 and formed the bulk of the US Army's tank force well into the 1930s along with 213 Renault FTs brought back from France.

Italy had received three FTs in June 1918, but the French proved unwilling to provide enough to form combat units. Plans to build the Renault FT in Italy were cut short by the war. After the war Italy embarked on its own light tank, the Fiat 3000, which was derived from the FT.

The Final Offensive

On 26 September 1918 seven Renault battalions began operations in Flanders and Champagne as part of the final Allied offensive. The September-October fighting was marked by wretched weather and determined German resistance from heavily fortified positions. Nevertheless, machine guns and artillery alone could no longer stop a determined infantry attack if bolstered by tanks. Three more regiments, totalling a further nine battalions, were committed later in the month on other fronts as part of the general offensive. The actions of the French

1



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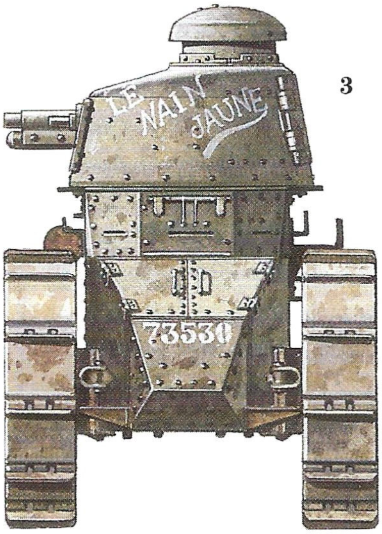
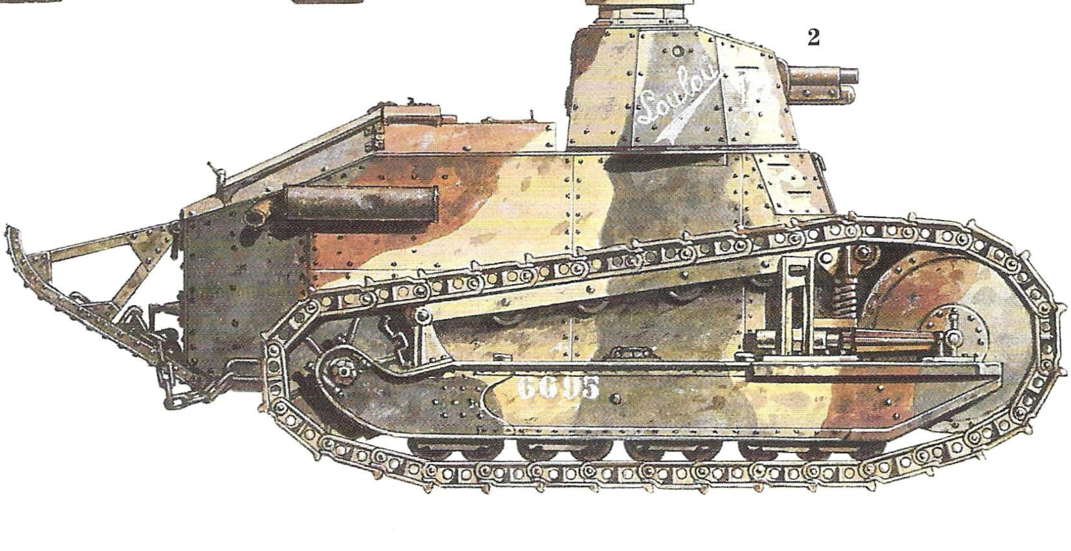

LE NAIN JAUNE
73530

1: Renault FT Char Canon, 'Le Tigre'; 2nd Co., 1st Section of unidentified regiment; Western Front, 1918

2: Renault FT Char Canon, 'Loulou', of unidentified unit; Western Front, 1918

3: Renault FT Char Canon, 'Le Nain Jaune', of unidentified unit; Western Front, 1918

2


Loulou
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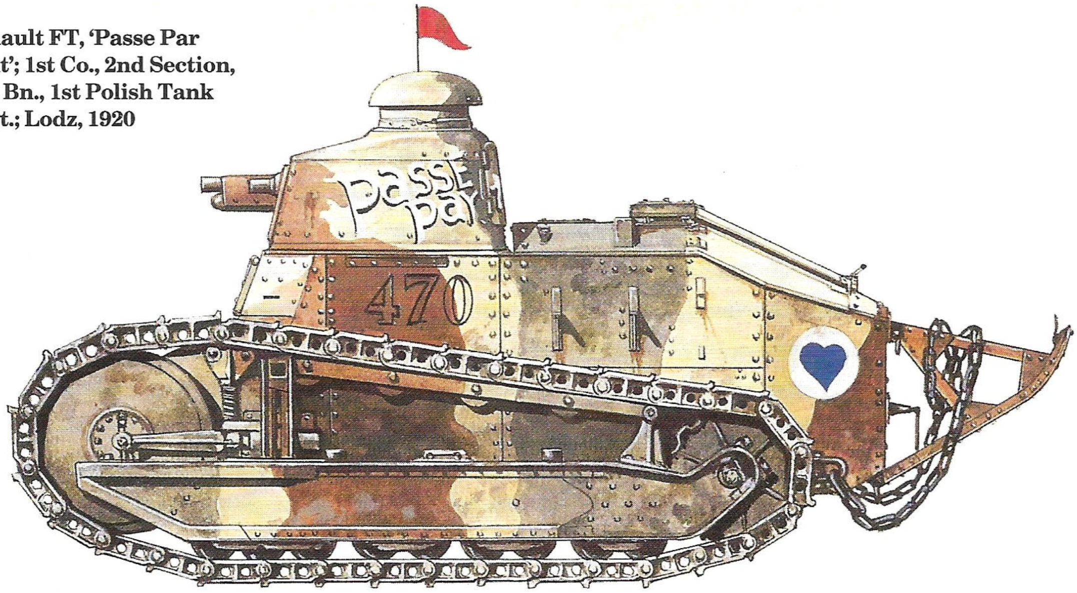
A

1: Renault FT, 'Passe Par Tout'; 1st Co., 2nd Section, 2nd Bn., 1st Polish Tank Regt.; Lodz, 1920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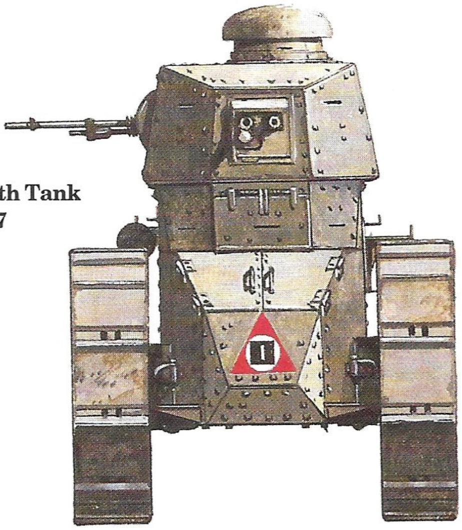
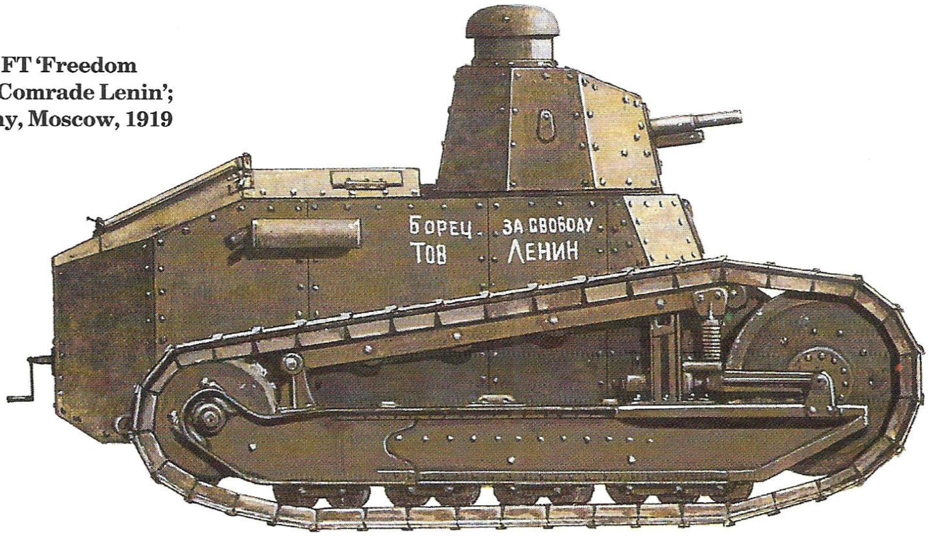
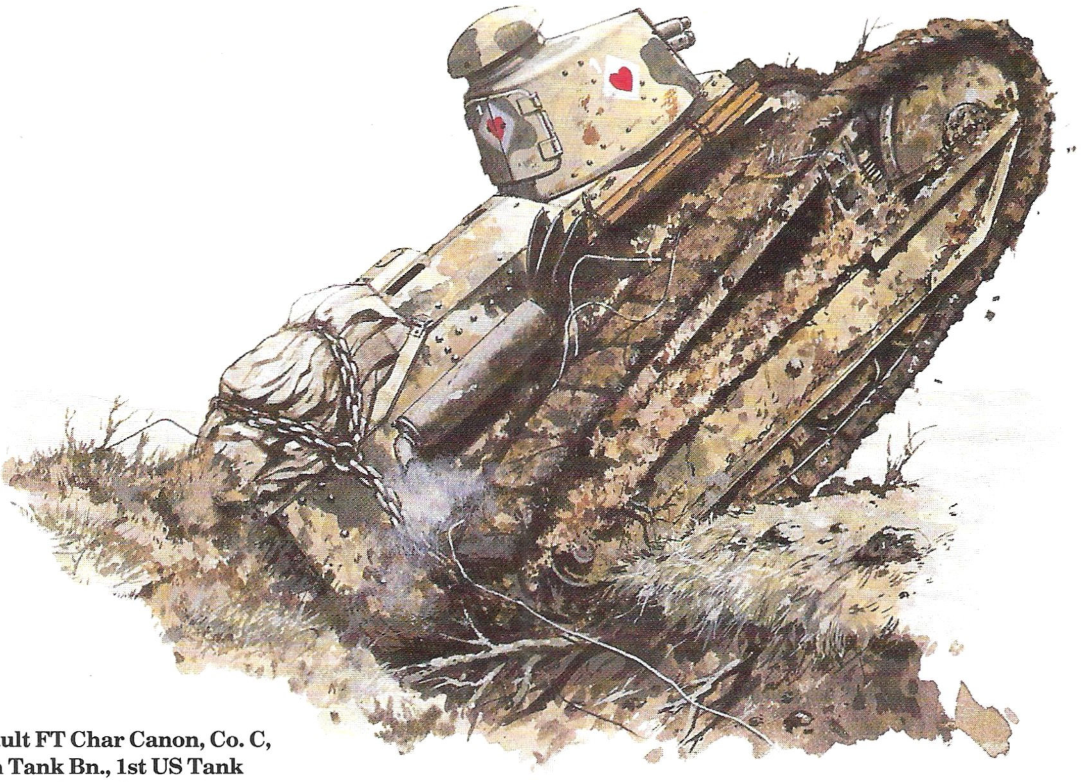
3: Krasnoye Sormovo M Tank, 7th Tank Unit; Red Army, Moscow, 1927



2: Renault FT 'Freedom Fighter Comrade Lenin'; Red Army, Moscow, 1919

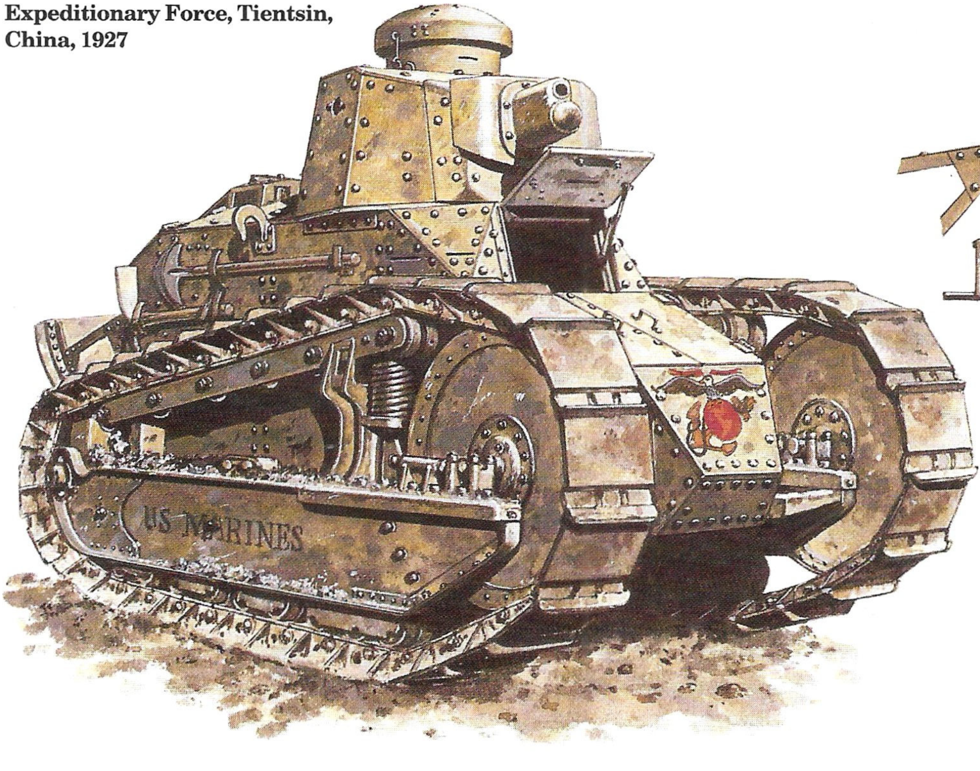

БОРЕЦ ЗА СВОБОДАУ
ТОВ ЛЕНИН

B

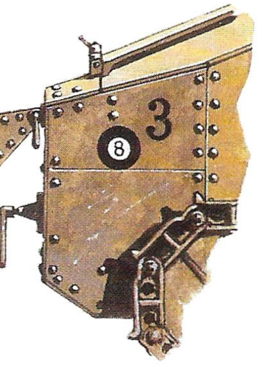


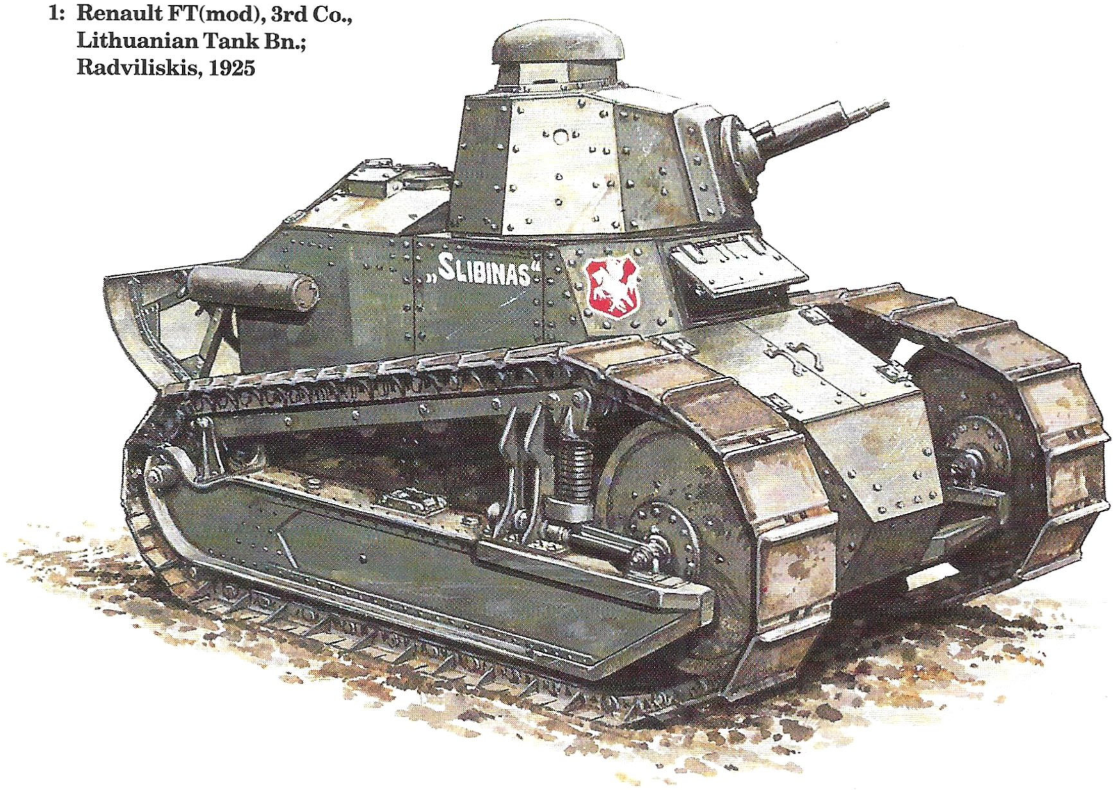
1: Renault FT Char Canon, Co. C, 327th Tank Bn., 1st US Tank Bde.; St. Mihiel, Sept. 1918

2: Six-Ton Tank, USMC Light Tank Platoon; East Coast Expeditionary Force, Tientsin, China, 1927

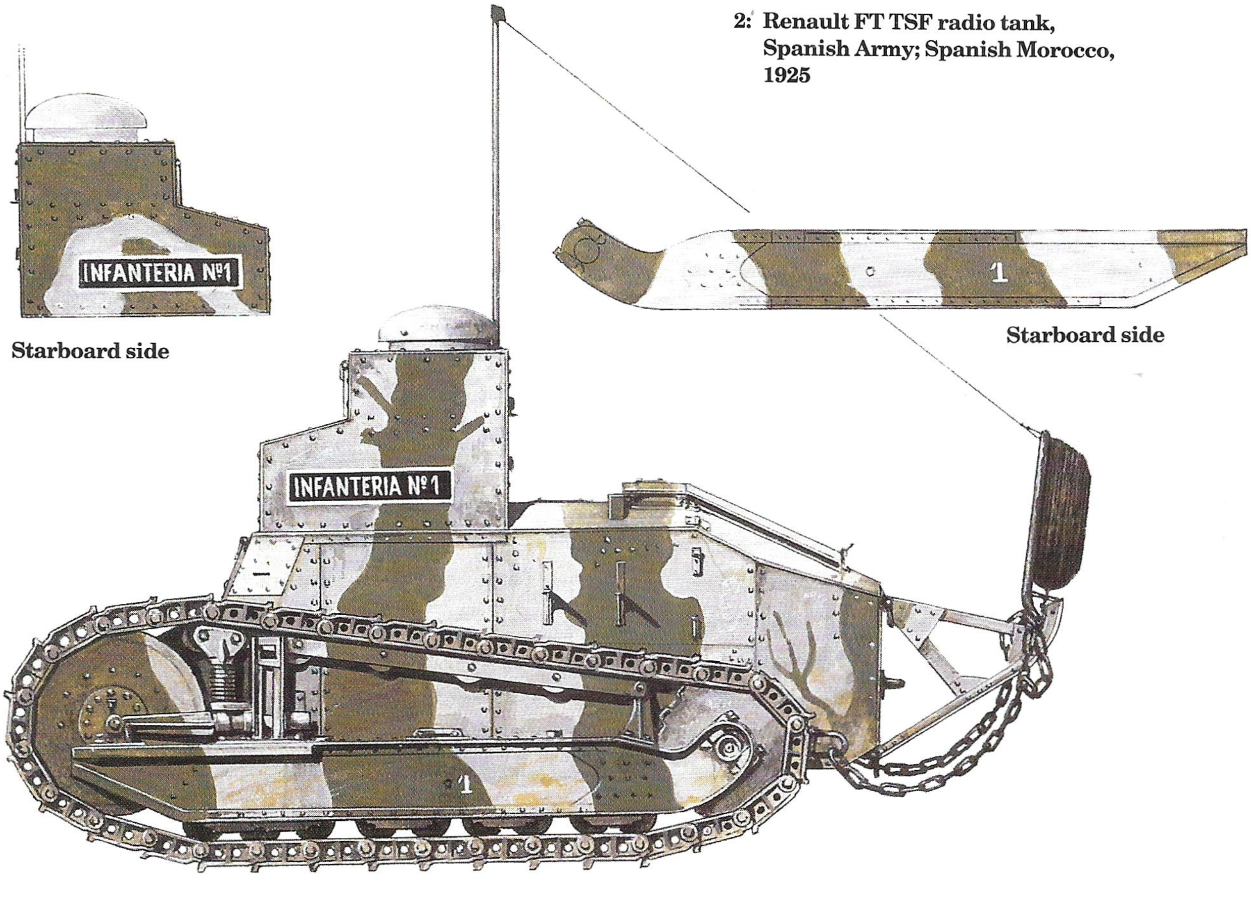


Rear hull marking





1: Renault FT(mod), 3rd Co., Lithuanian Tank Bn.; Radviliskis, 1925


INFANTERIA Nº1
Starboard side
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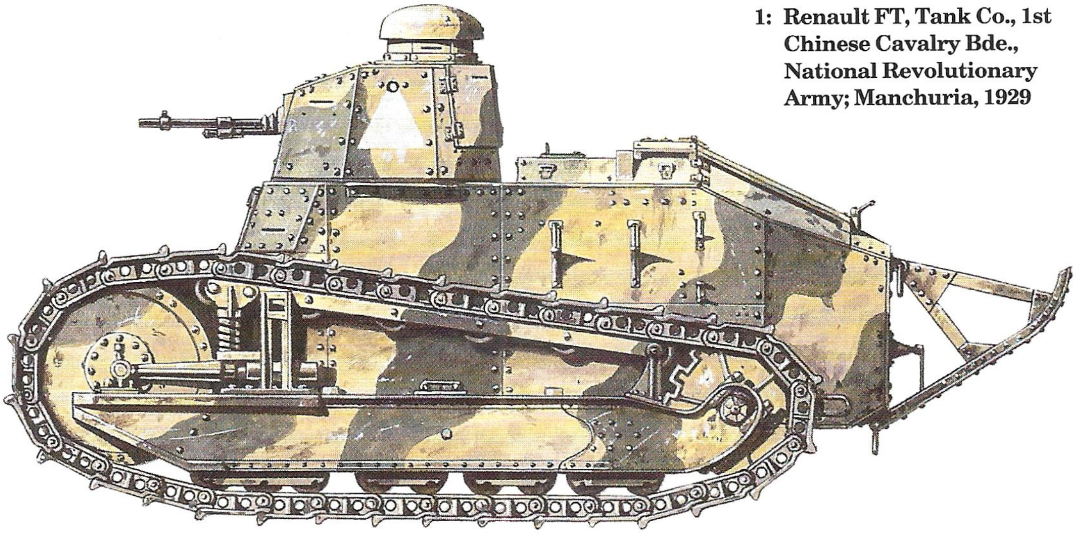
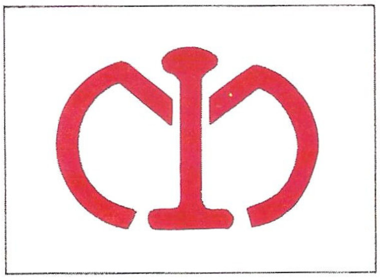
2: Renault FT TSF radio tank, Spanish Army; Spanish Morocco, 1925

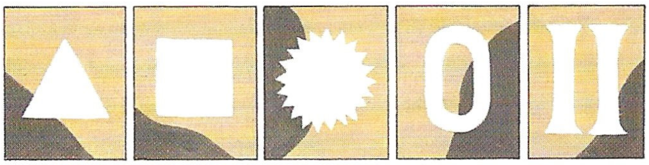
D

1: Renault FT, Tank Co., 1st Chinese Cavalry Bde., National Revolutionary Army; Manchuria, 1929



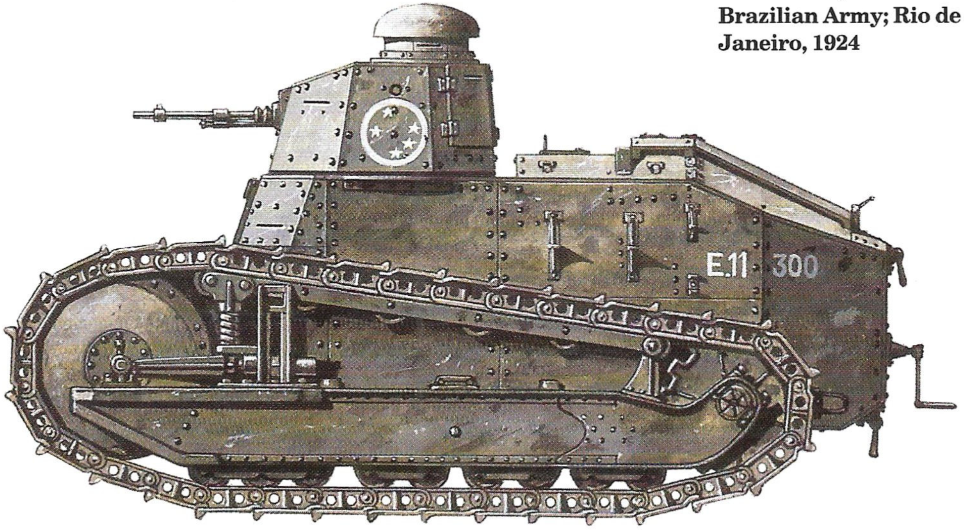


Manchukuo Army insignia

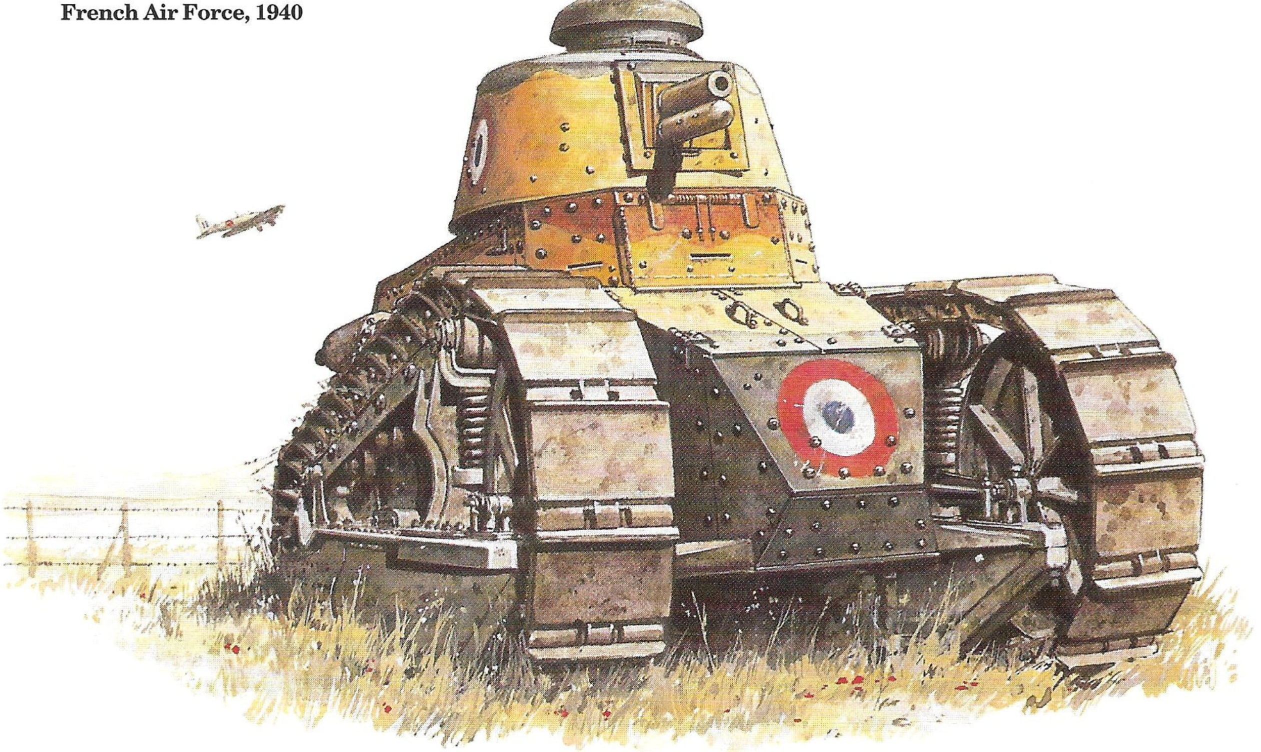


Unidentified NRA turret insignia

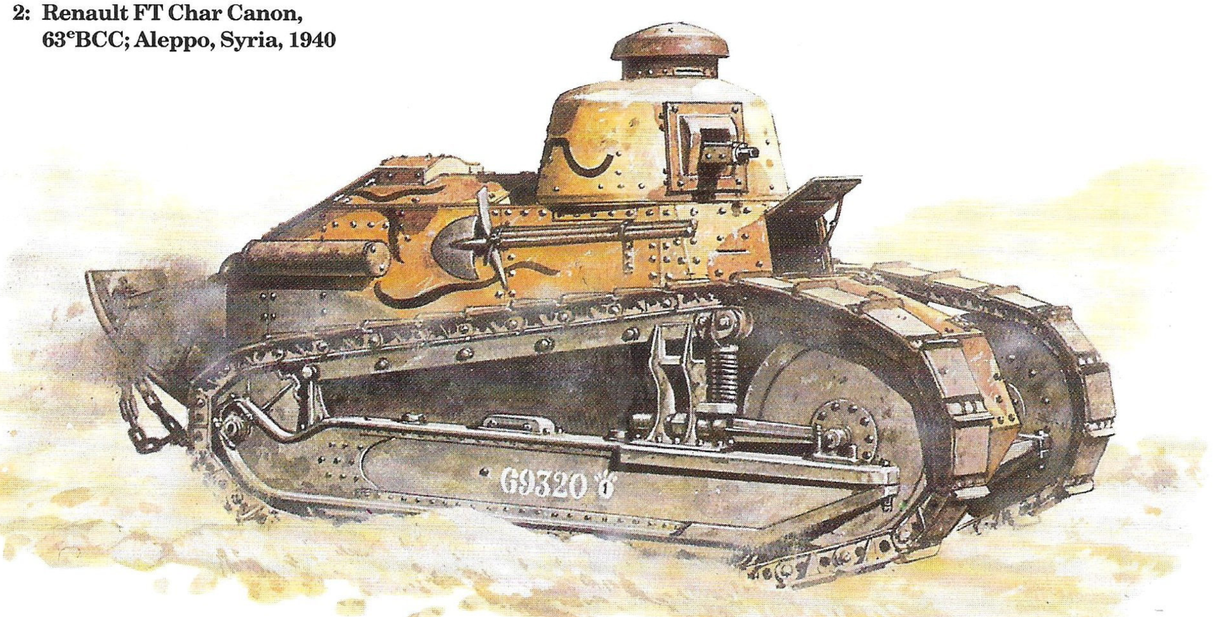
2: Renault FT, 1st Tank Co., Brazilian Army; Rio de Janeiro, 1924



1: Renault FT Char Canon,
French Air Force, 1940

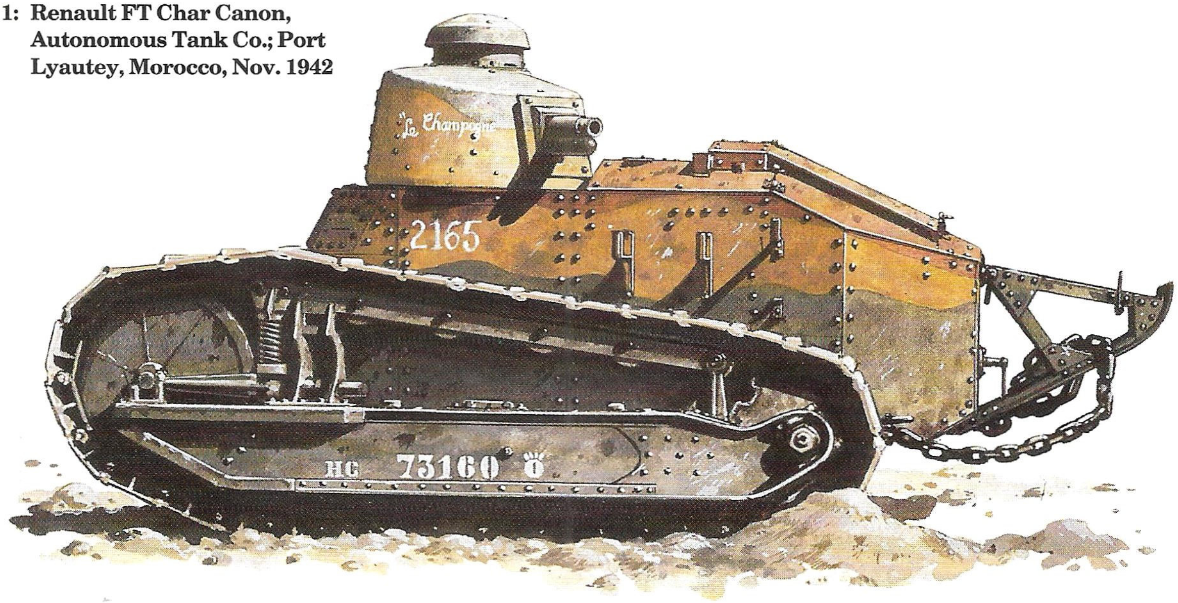


2: Renault FT Char Canon,
63eBCC; Aleppo, Syria, 1940

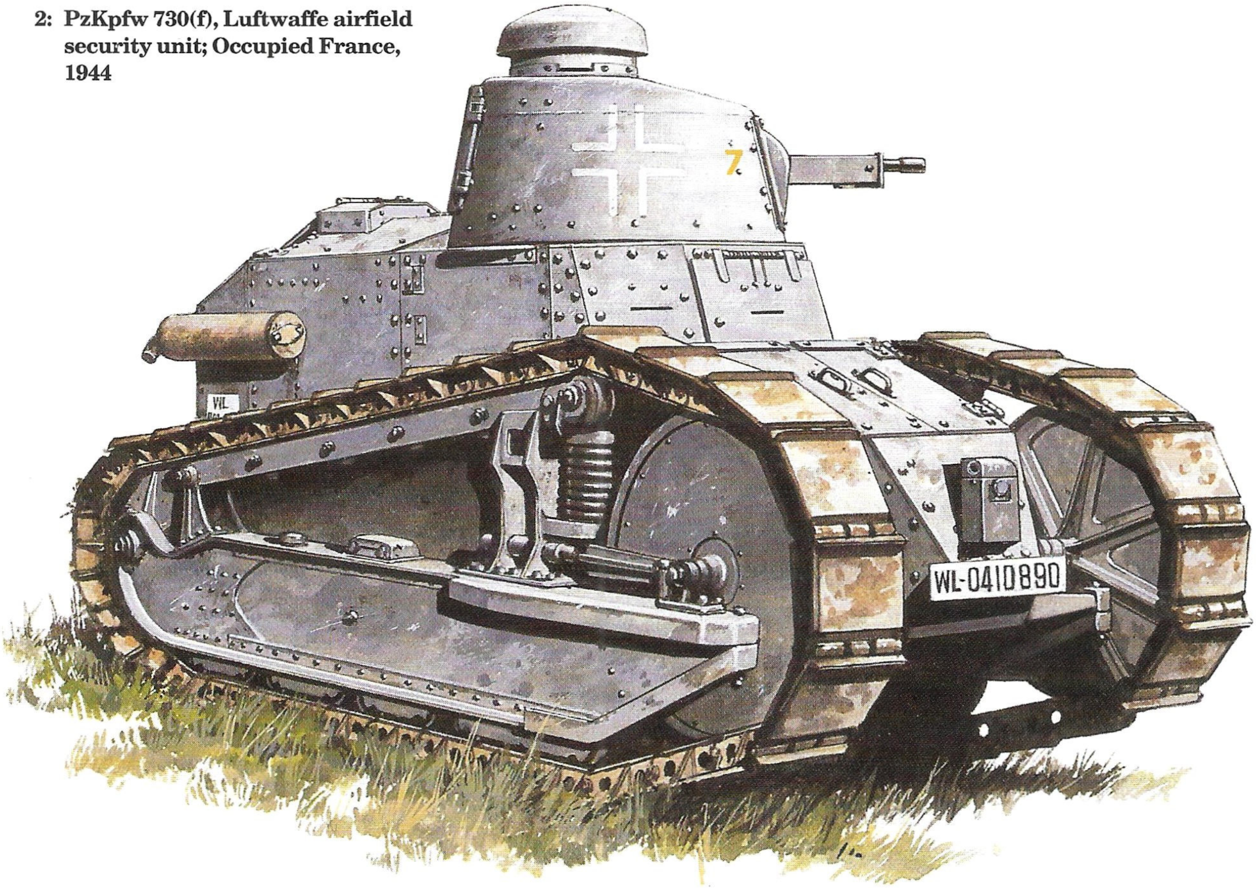


F

1: Renault FT Char Canon, Autonomous Tank Co.; Port Lyautey, Morocco, Nov. 1942


Le Champagne
2165
HG 73160

2: PzKpfw 730(f), Luftwaffe airfield security unit; Occupied France, 1944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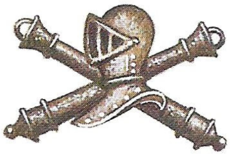
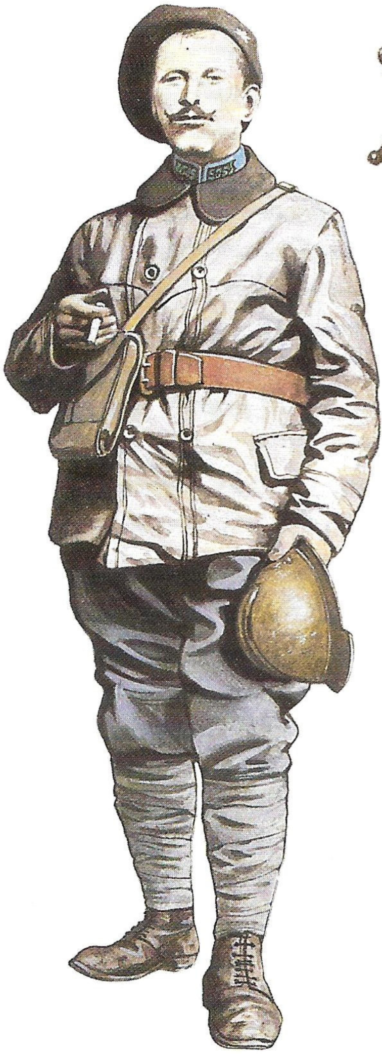
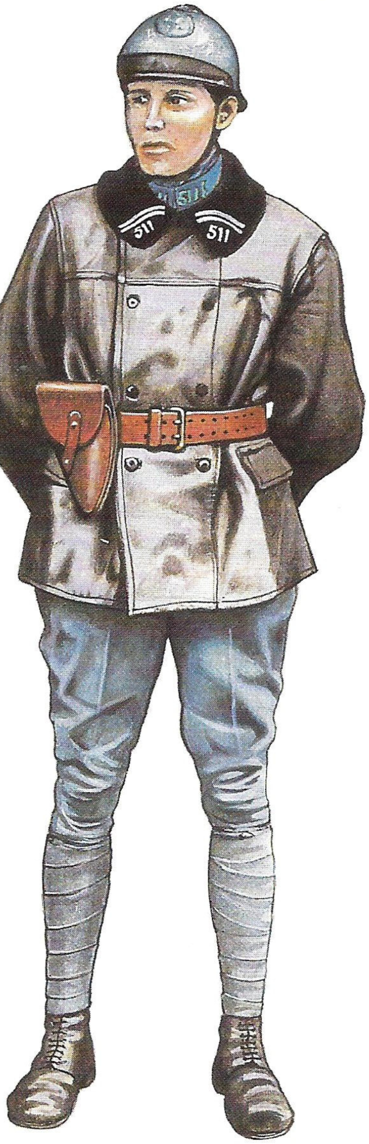


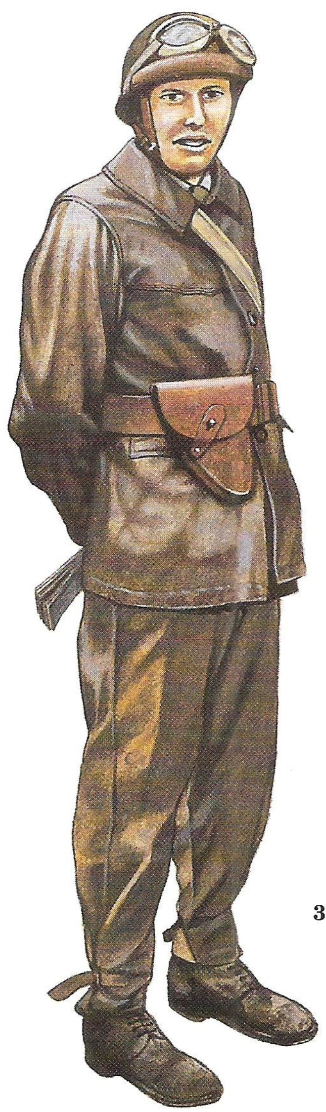
Beret insignia



1: French Assault Artilleryman,
1918



2: French Tank Crewman, 1937



3: French Tank Crewman, 1940

H

tank battalions have attracted little historical attention. In the 1920s and 1930s, the advocates of mechanisation ignored these encounters as mere examples of primitive infantry support tactics. They did not fit into the grand dream of sweeping offensives by massed formations of tanks with deep breakthroughs.

Judged by the high standards of the tank enthusiasts like Estienne and his British counterparts, the French tank actions in 1918 were not particularly impressive. But the dreams of the tank pioneers were unrealistic given the primitive state of the equipment available in 1918. The little Renaults were not really capable of any prolonged operations; after a few days of fighting, they were mechanically exhausted. Few units had more than half their strength after a couple of days of hard fighting and, inevitably, a fair percentage of tanks were stuck in trenches and shell craters. The Renaults had a maximum range of only about 25 miles before refuelling, and refuelling was a very cumbersome adventure in heavily shelled areas since lorries could not reach the tanks. Fuel had to be brought up on sledges towed behind tanks.

Judged by more realistic standards, the Renault units had accomplished their task. The French Army, which had been nearly as badly broken in the spring of 1917 as had the Russian Army, was rejuvenated and returned to the fight. While the credit for this can hardly be pinned to the Renault alone, the availability of large numbers of light tanks was an enormous morale booster for the weary infantry: the *poilus* no longer faced the machine guns alone. Instead, they could advance behind the cover of the little tanks, watching as their nemesis, the machine gun nest, was smashed and overrun by the tank. There were no grand drives in 1918 for the Renaults, only a monotonous string of brutish little engagements between Renaults and German defensive positions. These skirmishes may not have represented the birth of *blitzkrieg*, but they certainly heralded the end of trench warfare.

A total of 3,177 Renault FTs were built during the war, of which about 1,950 came from Renault. After the war Renault completed over 570 tanks, and total production was over 3,800 tanks of all models (not counting American production). The Renault proved to be a staple of French arms exports after the war. It also saw more combat use in the inter-war years than any other tank. Its small size made it ideally suitable for shipment to distant lands, and its simple construction served it well even in primitive conditions.

The Renault FT Tank 1919–1939

The Great War may have ended the fighting in Western Europe, but in other areas hostilities continued. With the collapse of the Tsarist Russian, Ottoman and Austro-Hungarian Empires a dozen small wars broke out over the spoils. French tank units were sent into Central Europe and the Balkans to keep the peace. The end of the war also saw ferment in some of the colonies and imperial holdings in Africa and Asia. The Renault FT saw combat in a surprising number of these wars. The Renault was small enough to be transported easily by sea or rail, and was the hi-tech weapon of its day; many an emerging army sought Renault tanks as much for prestige as utility, much as jet fighters are acquired today by Third World States.

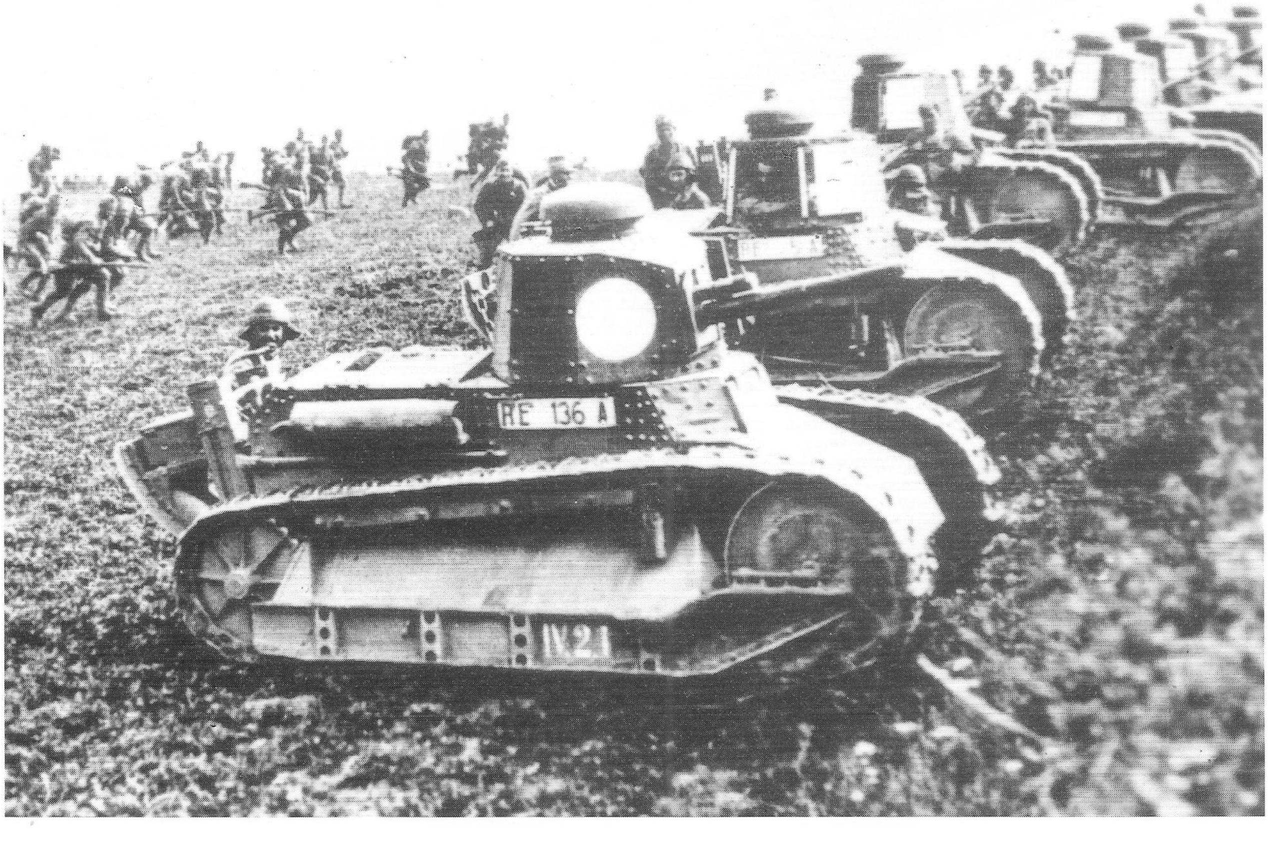
Russia

In the autumn of 1918 the 3^{e} Cie. of AS 303 was secretly transferred to Romania via Salonika in an attempt to buttress Romanian plans to re-enter the war on the Allied side. The tanks were landed on 4 October 1918, but did not see any fighting due to the confused situation at the time. They were reloaded on ships, and set off for another adventure, this time in revolutionary Russia. The company was commanded by Gen. Estienne's nephew, Capt. Gayet. It landed at the Black Sea port of Odessa on 18 December 1918.

Odessa was a pretty rough town even in peacetime, a seedy and more provincial version of ports like Marseilles. Under the conditions of civil war, it had degenerated into a particularly pestilent hole. The tank company suffered from the same morale problems as the troops of the two French and two Greek divisions in the area. They were not enthusiastic about risking their necks to sort out Russian problems now that the Great War had ended. To add further cosmopolitan flavour, there was a Polish division stationed in the city, formed from former draftees of the old Tsarist Army plus a rag-tag assortment of half-hearted Russian units. The tanks were first used on 7 February 1919 in conjunction with a White Russian armoured train to support a Polish infantry attack near Tiraspol. The company later supported Greek troops near Berezovka, where the first tank was abandoned due to mechanical problems after it had been burnt. This became the first Soviet tank. It was refurbished and sent to Moscow as a gift to Lenin, and later served as the pattern for the KS tank.

On 21 March 1919 a further five tanks were lost in an inauspicious encounter with a Bolshevik armoured train during actions against the Bolshevik 1st Zadnieprovskiy Division; this was probably the first engagement in which the FT had engaged an enemy armoured vehicle. Four of these were salvaged by the Bolsheviks, and were sent to the Kharkov Locomotive Factory (KhPZ) for rebuilding. They were used to form the Special Purpose Armoured Troop, which consisted of two sections of armoured cars and the section of four 'Reno' tanks. The tank troop first saw combat in support of an attack by the Soviet 14th Army near Novomoskovsk against the White Russian forces of Deniken. There is some mystery about the fate of this unit, which is largely ignored in Soviet histories. The 2nd Tank Unit, equipped with three captured British Mk. V tanks, is usually credited as the first Soviet tank unit to see combat even though it did not see its first fighting against the Poles until 2 July 1920. Probably, the Reno troop lost all its tanks to the Deniken forces. This could explain its disbandment in Moscow in September 1919, and the official amnesia about its embarrassing rôle in Soviet tank history.

Equally mysterious is the use of Renault FT tanks by Deniken's forces in southern Russia. The French apparently left behind the remainder of the AS 303



Italy had originally planned to manufacture the Renault FT, but these plans never materialised. Instead, production began in 1919 of a locally improved version, the Fiat 3000. This Fiat 3000 Mod.30, with 37/40 gun, is identified by its markings as the mount of the company commander (white disc), 2nd Co., 4th Bn., 1st Tank Regiment.

Renaults when they abandoned Odessa in April 1919, amounting to about ten tanks. Photos show Renaults in service with the White Russian forces, but there are no mentions of them in tank unit accounts. Like most White Russian tanks, they eventually fell into Bolshevik hands. The Bolsheviks may also have acquired the seven FTs lost by the Poles in the 1920 fighting; and there are some indications that a small number of FTs were sent to White Russian troops in Vladivostok which may have eventually ended up in Soviet hands. The French coaxed the Finns into 'loaning' three Renault FTs to support the actions of White Russian units in northern Russia near Petrograd; these tanks eventually returned to Finland.

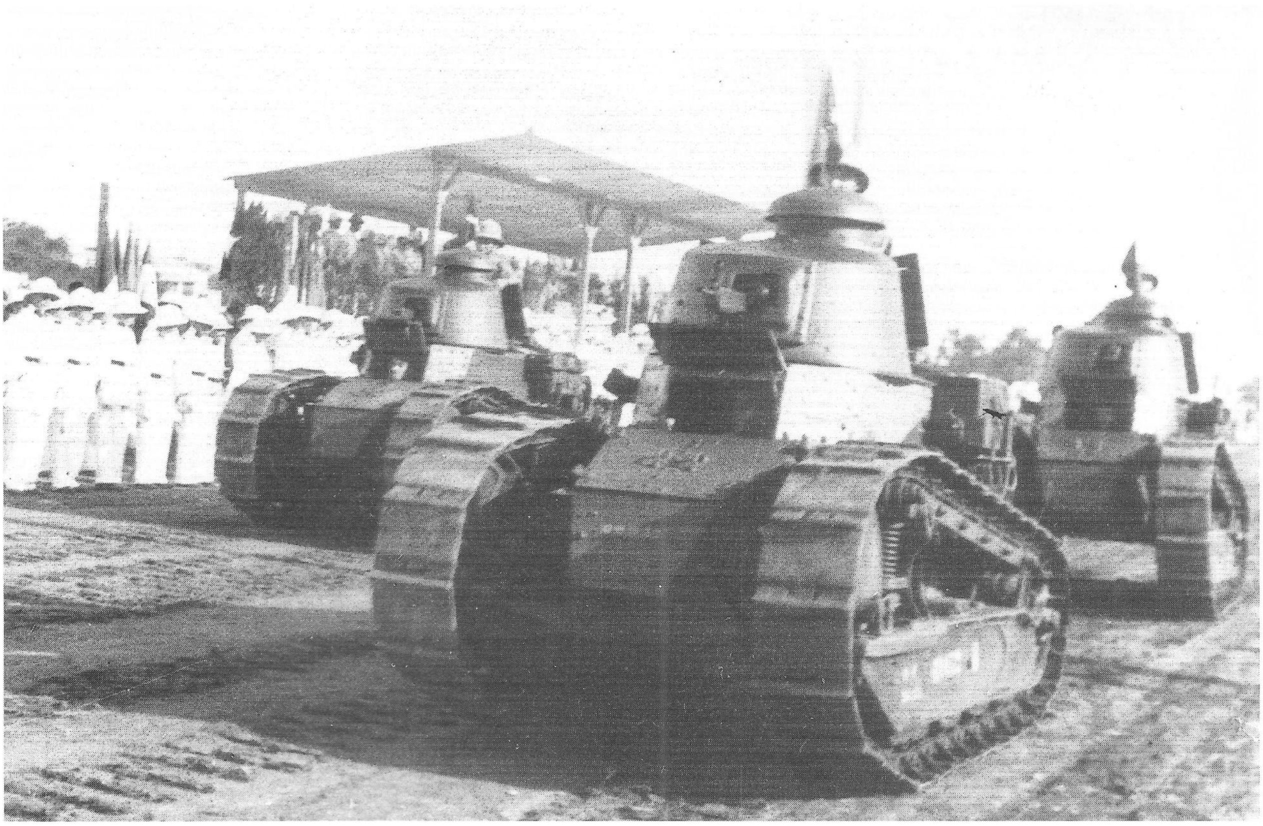
In 1919, the Bolsheviks decided to attempt to manufacture a copy of the 'Reno' at the Sormovo Admiralty Factory in Nizhni Novgorod. The project began in October 1919 under the direction of N. I. Khrulev and the first vehicle, named 'Freedom Fighter Lenin', was ready for tests in August 1920. It entered Red Army service in December 1920, and was allegedly followed by 14 more in 1921. The new tank was variously called the 'M' type (M—*maliy*: small); the Russkiy-Reno; or the KS tank, after the Krasnoye Sormovo Factory where it was built. What makes the Soviet claim so dubious is that they were virtually identical to the original French Renaults. Even the American Six-Ton Tanks, built from Renault plans with Renault help, had significant detail differences from the original French designs. It is more likely that the KS tanks were simply rebuilds of heavily battle-damaged tanks recovered from Poland and southern Russia. The Russkiy-Renos, whatever their origins, became a popular fixture at Red Square parades in the early 1920s in the service of the 7th Tank Unit. In 1927 Prof. V. Zaslavskiy led an effort to develop an improved Renault FT using new licence-produced Italian Fiat engines. This eventually resulted in the T-18 light tank, of which some 960 were built from 1928 to 1931, making it the most numerous tank type of the 1920s. About 400 modernised T-18Ms were still in Soviet service when war broke out with Germany in 1941.

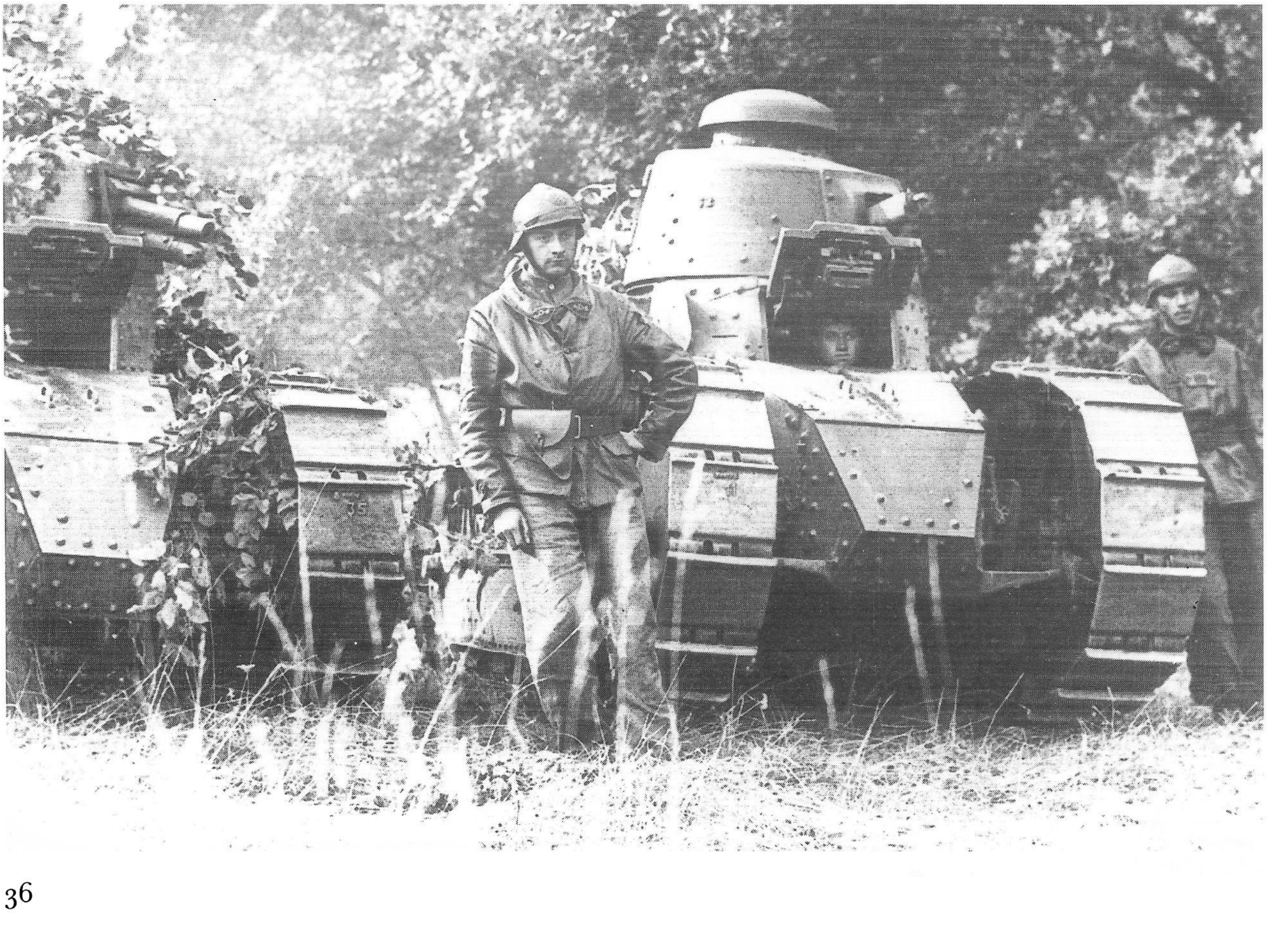
Poland

The largest single combat use of Renaults after the Great War took place in the eastern borderlands of Poland. No Renault regiment saw as much fighting over such a prolonged period of time as the French 505^{e} Régiment/Polish 1st Tank Regiment. French actions to support the newly independent Poland included extensive help in equipping its army. In 1919, France agreed to Polish requests for tanks by offering to gradually transfer a French tank unit. The 505^{e} Régiment under Maj. J. Marc was something of an 'international unit', having been used to support American troops during the 1918 fighting. It was decided to use portions of this unit to form a joint Franco-Polish regiment, with the Poles eventually taking over the unit once they were sufficiently trained. The unit was transferred from the Vosges region to Lodz in western Poland in May–June 1919, becoming designated the 1st Polish Tank Regiment (*1 Pulk Czolgow Polskich*). A total of 120 tanks were sent, consisting of 72 gun tanks and 48 machine gun tanks.

The 2nd Tank Company was the first to see action, near Bobruisk in August 1919. Two tanks were lost, one in an engagement with the Bolshevik armoured train BP No. 4. On their return to Warsaw after the fighting, most of the French crews finally departed, though French officers remained as advisers. The 1st Battalion (1st and 2nd Companies) was sent to support operations in north-west Poland opposite Byelorussia and Lithuania, and the 2nd Battalion (3rd and 4th Companies) was dispatched to the Ukraine.

The Polish Army had advanced deep into the Ukraine in the spring of 1920, but in May the Red Army's cavalry began counter-attacks which eventually threw the Poles back west. The two companies had the thankless task of acting as a rearguard to cover the Polish retreat from the vaunted Budyonny 1st Horse Army. Mechanical problems often threatened to incapacitate the units. One method to avoid wearing down the tanks while still retaining their fighting value was to mount them on railroad flatcars, which could then be propelled around as mini-armoured trains. The fighting in the spring of 1920 involved a series of frustrating retreats with little or no infantry support and the tanks were often left behind to fight their way out. The performance of the scattered crews was exemplary, and the isolated companies usually managed to extricate themselves from the most hopeless situations. There were occasional en-

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counters with Bolshevik armour, with the 2nd Battalion knocking out at least two armoured cars. Most of the tank companies were brought back to central Poland in the summer for rebuilding their worn-out tanks.

With the Red Army rapidly approaching Warsaw in mid-August, the French advisers were insistent that the tanks be grouped together for the defence of the capital. By the time that three companies were eventually gathered and formed into a special armoured group under Maj. Nowicki along with three armoured trains, the Polish Army was ready to go over to the offensive. On 17 August the group successfully cleared the main route towards Minsk Mazowiecki, with the trains blasting their way through the stations leading to the objective, while the tanks on the wings cleaned out neighbouring woods and villages. Many of the tanks were completely broken down, so five from the battered 2nd Company were mounted on flat cars. They were assigned to cut off the retreating Soviet cavalry by a drive towards Mlawa on 20 August, and overran the 18th Infantry Division, capturing the headquarters. The armoured group moved into position to block the retreat of Gai's Horse Corps, which had been the main Bolshevik strike force of the attack on Warsaw. Maj. Nowicki, on board the armoured train *Danuta*, was killed by artillery fire when the train found itself in the midst of the retreating Bolshevik cavalry on the misty morning of 23 August; but the rest of the armoured group helped form the final trap which forced the Horse Corps to retreat into neutral East Prussia.

The fighting in Poland was remarkable in a number of respects. It subjected the Renaults to sustained, mobile operations totally unlike any seen on the Western Front in the Great War. Only 12 tanks were knocked out, mainly by artillery fire, and only seven were left behind to the Bolsheviks. This can be attributed in part to the durability of the Renault, but also to the stubborness of the Polish crews and their skill at improvisation in the most primitive of conditions. The heroic actions of this regiment resulted in the award of 34 Virtuti Militari, the highest Polish military award, to the tank crews of the unit.

The Poles acquired a small number of new FTs after the war to make good losses, including the TSF radio tank. To reduce tank wear, the Central Truck Workshop (CWS) built 25 '*Zelazniak*' training tanks, using non-armour steel plate and some surplus FT components like engines and clutches. The Poles also conducted an active programme to modernise the FT including the use of a new track, developed by S. Kardaszewicz, on about 65 tanks. One of the more unusual efforts was the development of a special rail-carriage stemming from the 1920 experiences. The FT could be driven on to this carriage, and propel itself along by its own power. These were used in conjunction with armoured trains to act as rail-scouts. By the mid 1930s Poland's inventory stood at 174 Renaults (including about 10 NC-1 and other Renault derivatives).

(*Above*) Renault FTs were sent to the Levant, first to fight the Turks in 1920, and then to put down a Druze revolt in Syria in 1925. Afterwards, they became a regular part of the garrison in Syria. These Renaults on parade in Syria in the mid-1930s are of the modernised type with the *Mle.31* Lebel machine gun fitted in place of the cumbersome old Hotchkiss *Mle.14*. (National Archives)

(*Below*) The Renault FT was the backbone of the French tank force until the latter half of the 1930s; it began to be replaced by the Renault R-35 in 1937. Here, a pair of Renaults are seen on manoeuvres in the mid-1930s. The tank to the left is a *char canon*, while the vehicle to the right is a modernised *char mitrailleur* with the *Mle.31* Lebel machine gun. (National Archives)

European Exports

The FT was the tank of choice in the Baltic states. Finland purchased 32 in 1919 (14 gun, 18 machine gun types) of which three were loaned to the White Russians, as mentioned earlier. Neighbouring Estonia bought 12 Renaults in 1924 (four gun, eight machine gun) which formed two companies in its Auto-tank Regiment alongside four British Mk. V tanks. Lithuania purchased 12 Renaults in 1923, but armed them with 7.92mm Maxim heavy machine guns instead of the usual Hotchkiss. Latvia was the only country in the region not to acquire Renaults, but in the 1930s obtained six Fiat 3000 tanks instead. The Czechoslovak Army bought seven Renaults, mainly for training and tactical trials. Yugoslavia acquired a mixture of 48 Renault FTs and M27/28s in the 1920s, and these remained in service until the war in 1940.

France also exported modest numbers of Renault FTs to armies in western Europe. Belgium acquired 54 in 1919, which served in a tank regiment until 1934; subsequently they served in *Gendarmerie*

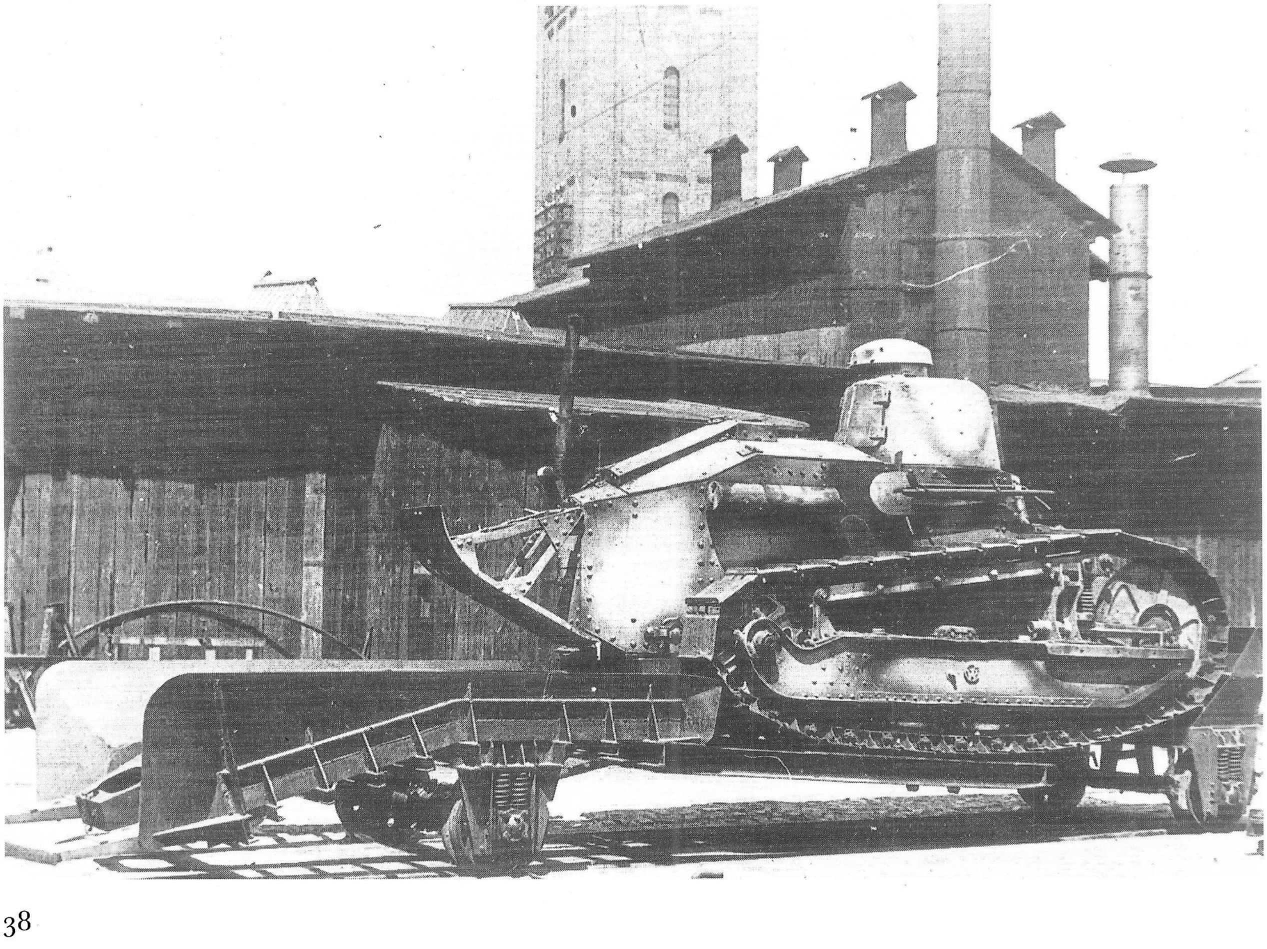
Mobile Groups, but were all scrapped by 1938. Switzerland bought two for trials in 1922 and got three more in 1939. The Netherlands acquired a single tank for trials, and Sweden bought a single NC 27. The one major customer outside Europe was Brazil, which obtained a company of Renault FTs in 1921, the first tanks in South America. This company was stationed in Rio de Janiero, and was later joined by two more companies, eventually totalling 40 Renaults.

The Balkans and Middle East

By the time that the troops of AS 303 returned from their ill-fated mission to Russia, two more companies, AS 301 and AS 302, had been sent to the Balkans. AS 301 was assigned to lead the attack against the communist government of Bela Kun in Hungary, but he was ousted before the unit arrived. It was sent to Constantinople as part of the French occupation forces in Turkey. In March 1920 the tanks of both the AS 301 and AS 302 were turned over to the new Romanian Army, where they formed its first tank unit. In the 1920s, more FTs were acquired, bringing the total to 74; these formed the *Regiment 1 care de lupta*. The FTs remained in Romanian service through most of the Second World War being retained in a GHQ tank battalion for rear area security duties.

France originally supported Greece in the fighting with the remnants of the Ottoman Empire. There have been reports that this aid included a company of Renault FTs, which later fell into Turkish hands during the fighting in Anatolia in 1921. The French 5th Tank Battalion was dispatched to the Levant late in 1919, and it became involved in border fighting against Turkish forces around the Cilician Gates and the Syrian frontier lasting from May 1920 until March 1921, when a peace treaty was signed. By 1921 French policy was shifting in favour of the insurgent Turkish forces under Kemal Ataturk; that autumn

The Polish 1st Tank Regiment often put tanks on rail flatcars during the 1920s war with the Bolsheviks to conserve them mechanically. After the war they developed the *drezyna pancerna R* which had a power take-off allowing the tank to propel itself along the railway line. These were used as rail scouts ahead of armoured trains. (Janusz Magnuski)



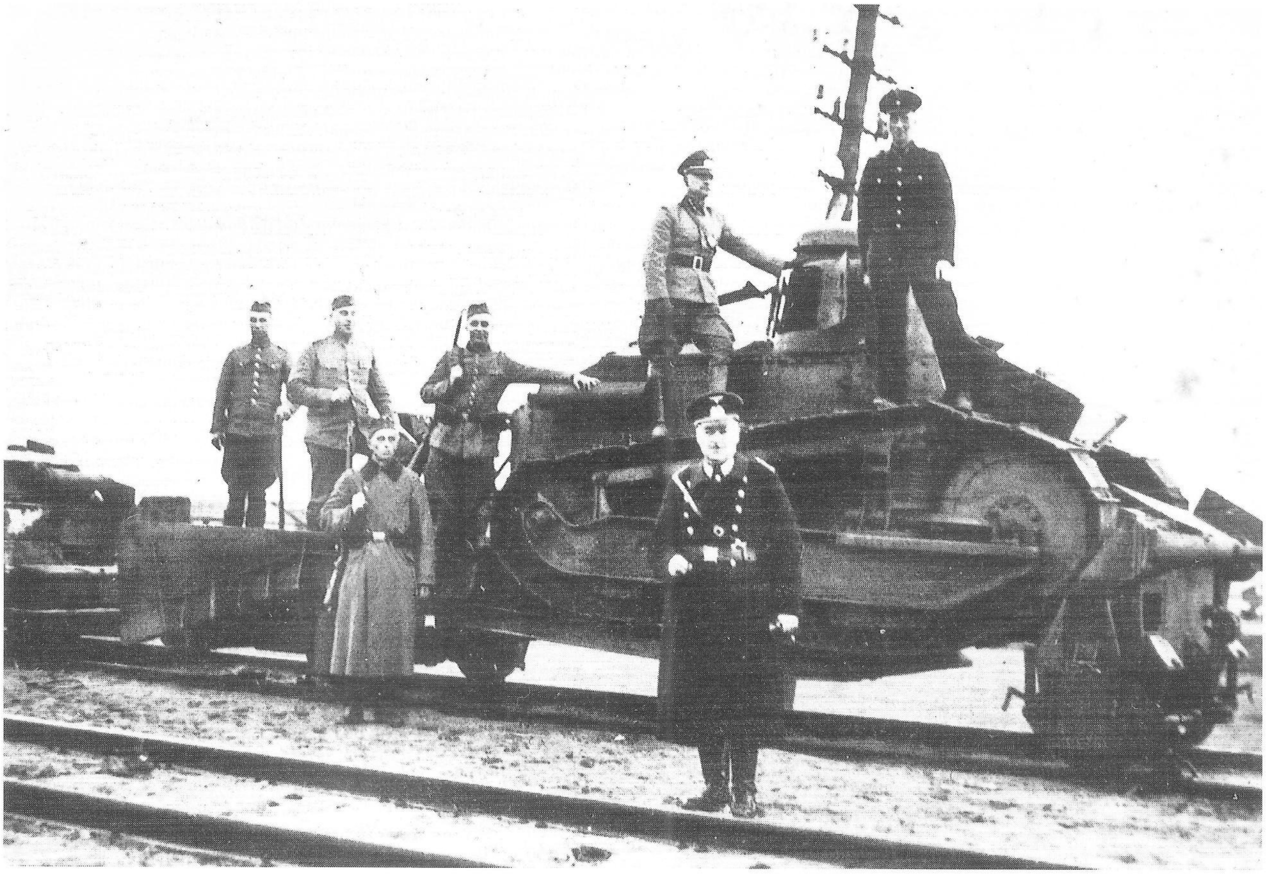
France reached a secret agreement with Ataturk, and as a result the third company of the 5th Tank Battalion was turned over to the Turkish Army. It was used during the ultimately successful war with Greece. France also supported the efforts of Iranian nationalists under Reza Khan, supplying them with a company of Renaults in 1924.

War in the Desert

A small detachment of Renault FTs was sent to the ill-defined borderlands between Morocco and southern Algeria in 1919 to help guard French posts. It was relieved in 1920 by AS 327, which took part in the fighting against raiding tribesmen at Kassarat and El-Khemis in 1921. In the wake of the disaster that befell Spanish troops at the hands of Abd-el-Krim's Berbers at Anoual in Spanish Morocco in 1921, the French agreed to sell Renaults to Spain. Twelve tanks were purchased in January 1922, forming the *Compania Renault de Carros de Asalto de Infanteria*. Following brief training in Spain, the unit was dispatched to North Africa, and took part in fighting against Rif positions near Ambar and Tungunz on 13 March 1922. During the bitter fighting several crews were killed and two tanks burned. Over the next few years the tanks were used for convoy escort, guard duty and occasional attacks. In 1925 six more tanks were acquired to replace destroyed or worn-out vehicles.

The year 1925 marked a turning point in the Rif War. France and Spain began major efforts to overcome the Berber rebel army and the 1st Moroccan Tank Battalion (517^{e} RCC) was dispatched to Morocco to bolster French attacks starting in May, followed by a second battalion in July. The tanks were used mainly in an infantry support rôle. The 508^{e} Compagnie was experimentally equipped with the modified Renault M27/28 tank with rubber tracks, but the rocky terrain quickly shredded the track and brought the experiment to an end. In the autumn of 1925, a concerted French-Spanish offensive began. One of

During the Spanish Civil War, both sides inherited a small number of Renault FTs. In 1937 the Republicans managed to acquire a further 16 in a secret arms deal with Poland. They were used mainly in the Madrid area. (National Archives)



A Polish *drezyna pancerna R*, captured by the Germans during the fighting in 1939. In 1939 the Poles operated about 32 of these to support their armoured trains, as well as three companies of conventional Renault FT tanks. (Janusz Magnuski)

the more interesting aspects of the offensive was the Spanish use of landing craft to disembark the Renaults at Alhucemas on 8 September 1925, the first wartime amphibious tank landing. With the successful conclusion of the fighting in 1926 the surviving Spanish Renaults returned home, but the 517ᵉ RCC remained in Morocco, renamed the 62ᵉ RCC. It saw action again in the French pacification campaign in the Atlas Mountains from April 1930 to October 1933.

France dispatched the 5ᵉ Cie of 521ᵉ RCC to Syria in September 1925 to help put down the Druze revolt in her mandate territory. It took part in the fighting in Damascus, and later supported French infantry and légionnaires in the bitter fighting of 1926. The utility of the Renaults in the fighting in Morocco and Syria led to the French Army stationing a number of tank units in the colonies during the 1930s.

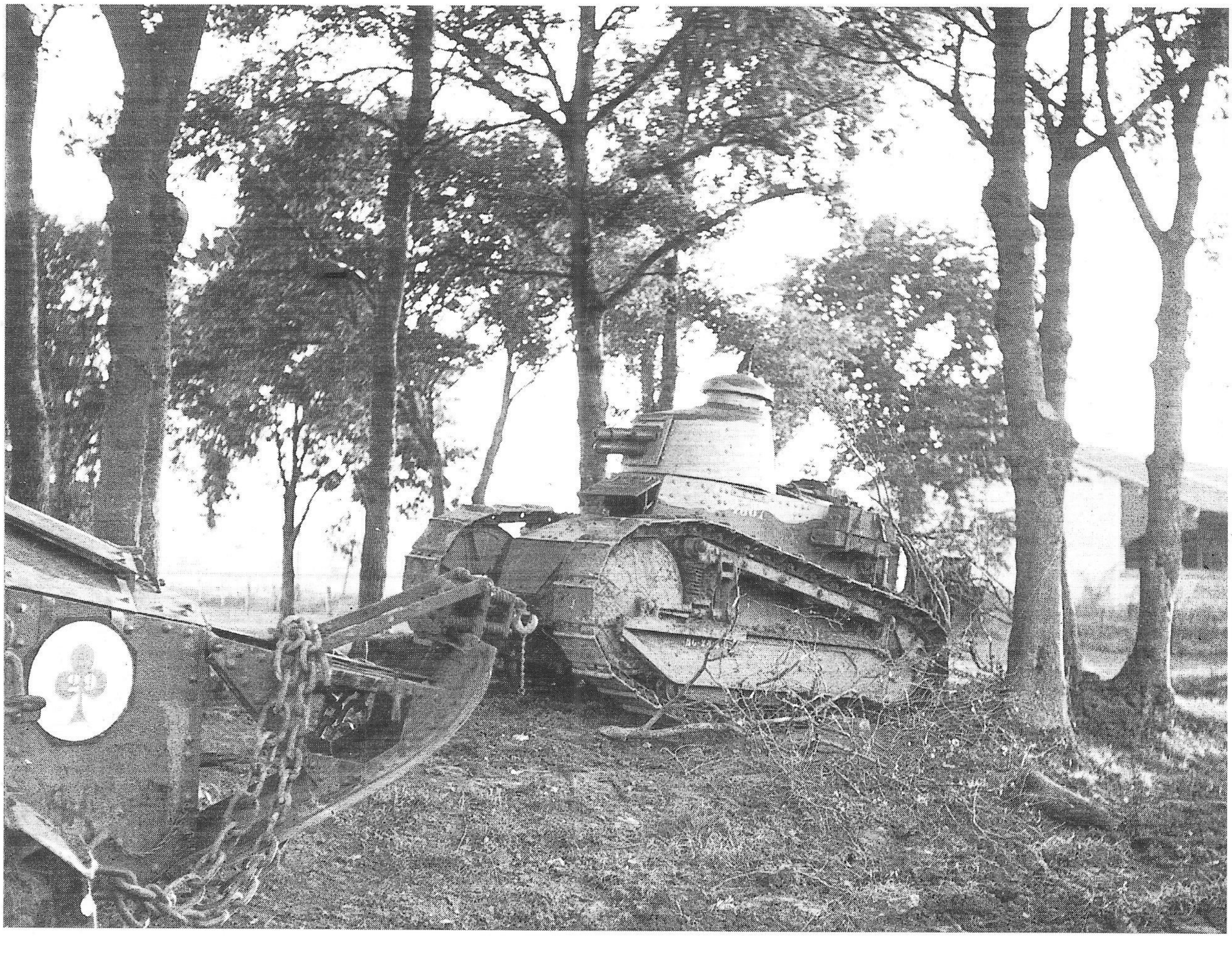
China Station

France had dispatched a small number of Renault FTs to Vladivostok in 1919, and these were later passed on to the Manchurian Army under Chang Tso-Lin. The continuing border wars between Bolshevik, White Russian, Chinese and bandit forces led the Soviets to deploy most of their small inventory of refurbished FTs on the Manchurian border in the mid-1920s. The Manchurian Army purchased 14 more Renaults in 1924–25, and these were used in the fighting with the warlord Wu Pei-fu in 1926. In 1929, the Renaults were nominally attached to the 1st Cavalry Brigade of the Chinese National Revolutionary Army. During the fighting with the Soviets over the Chinese Eastern Railway in the autumn of 1929 the Soviets brought up a company of MS-1 (T-18) light tanks to counter the Renaults, but a tank-vs-tank confrontation never materialised. The Japanese Army seized nearly all of Chinese/Manchurian Renaults in 1931 when they occupied Manchuria, adding to a small inventory of Renault FTs and NC 27s they had purchased in 1922. In Japanese service, they were known as the Type 79 Ko-Gata. The Renault FTs and NC 27s were used to form two tank companies in 1925. In 1931, a section of Renaults was sent to Manchuria to operate alongside the Armoured Car Platoon of the Kwangtung Army.

In the 1920s, two sections of Renaults were stationed in French Indochina, one in Saigon and the other in the citadel at Hanoi. During the China crisis of 1927 the Saigon company was sent to Shanghai to protect the French concessions. It was joined later in the year by the US Marine Corps Light Tank Platoon, equipped with the Six-Ton Tank. The Marine tanks were used to guard the rail line between Shanghai and Tientsin; and in 1928 two more French FT tank sections arrived to serve in Tientsin. Japan dispatched some of its Renault FTs and NCs to Shanghai in the same rôle. The Americans departed in 1929, but the French and Japanese remained. The Japanese NC 27s, called Type 89 Etsu B, were used during the Shanghai incident of 1931. The Japanese seized the three sections of the French China Light Tank Company in the late 1930s; they were later turned over to the puppet Manchoukuoan Army which used them into the 1940s. The section in Hanoi remained there until 1945, and fought against the Japanese in that year when they occupied the citadel.

Spain

The Spanish Civil War was a precursor of the fighting that would engulf Europe in 1939. The Spanish Army had ten Renaults still running. The Republicans inherited Infantry Light Tank Regiment No. 1 in Madrid; and Infantry Light Tank Regiment No. 2 in Saragossa was taken over by the Nationalists. Tank Regiment No. 2 was used briefly in the fighting on the Huesca front, but their poor mechanical state soon rendered them inoperable. The Republicans used their FTs in the defence of



A pair of Renault FTs of the 29^{e} BCC rest in the woods during the *drôle de guerre* in 1940. The 29^{e} BCC, under Cmdt. Bernier, served with the 3rd Army in the 1940 fighting. (ECP Armée)

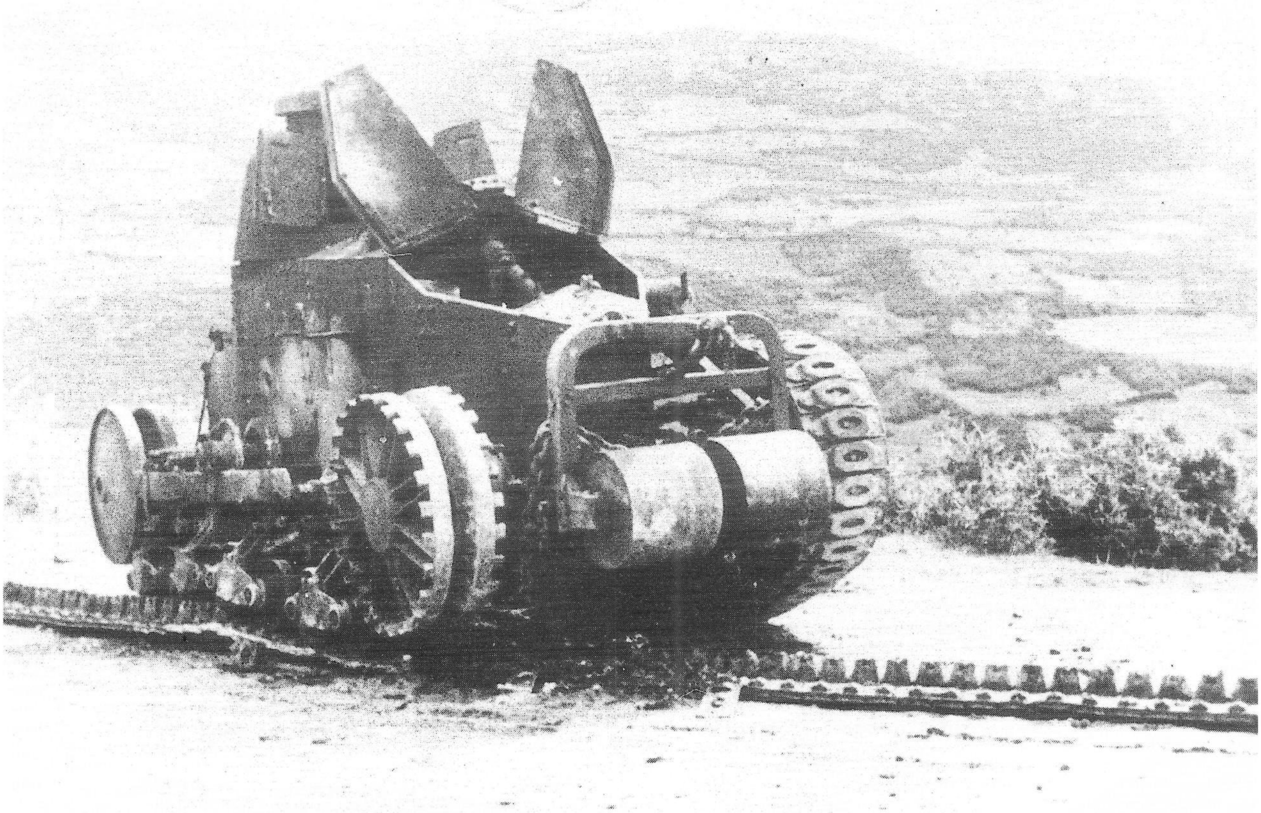
Madrid. These were reinforced in 1937 when Poland sold off 16 of its Renaults 'to Uruguay', the FTs ending up with the Republican forces in Spain.

The Renault in the Second World War

At the outbreak of war in 1939, the **Polish Army** still had about 70 Renaults operational with the 111th, 112th and 113th Independent Tank Companies (15–16 tanks each). A further 32 were in use with armoured train units on the '*drezyna pancerna R*'. The 111th Tank Co. saw some fighting around Lukow, and the other two near the fortress city of Brzesc. They were mainly used as static defence points since their mechanical state was so parlous. The Renaults used with armoured train units were mostly employed as rail-scouts, and saw fighting from the outset of the war. The Germans captured some Polish FTs, but these were probably scrapped.

France began replacing the Renault FT in infantry tank units with the Renault R-35. The first battalion to be converted was the 9^{e} BCC in June 1937. This process was not completed by the time the war broke out, and there were still eight battalions and three companies of Renault FTs operational, totalling 536 tanks. The French Air Force operated a number of FTs for airfield security. There were a further 54 with the 63^{e} BCC in Syria, and 244 with units in North Africa. In addition to the operational tanks, there were about a thousand derelict Renaults at a large depot at Gien. In the late 1930s Renault FTs with the 37mm gun had their armament removed for refitting on

The Yugoslav Army fielded a mixed battalion of Renault FT and M28/29—the *I Bataljon bornih kola*—during the 1941 campaign against the German invaders. This Renault M28/29 appears to have shed a track and suffered an engine breakdown before being abandoned to the Germans. (National Archives)



the new Renault R-35, and most of the others were mechanically worn-out. The French high command was well aware of the decrepit state of the Renault FT, and so these battalions were mainly held in reserve. With a few exceptions, they did not see very much fighting. Probably the most famous action involving the FT took place at Château Thierry. The French *Ecole des Chars* formed an improvised battalion, including a company of Renault FTs. The Company held positions along the south side of the Marne River, and a key bridge was occupied by an FT under the command of Cadet de Rouge. On 10 June 1940 a German motorised column escorted by two armoured cars attempted to fight their way over the river. The cadet managed to knock out about ten German trucks and vehicles before he was killed by German fire. Nevertheless, the improvised company managed to hold the Germans to the other river bank.

Although the fighting was over for Renault units in metropolitan France, units in the colonies saw action later. The 6^e and 7^e RCA in Syria had been entirely reequipped with 90 R-35s after the 1940 fighting, and the Renault FTs were put in reserve. During the battles in June-July 1941 between the Vichy French garrison and British and Allied troops the Renaults were used on a small scale. A similar situation prevailed in North Africa. Following the 1940 armistice the Vichy French forces were reorganised and most of the Renault FTs were replaced by more modern equipment. However, the sheer number of FTs available led to many being retained for local static defence, especially the defence of airfields. At the time of Operation 'Torch' in November 1942 the Renault FTs did see some fighting against American troops, for example supporting infantry in the initial defence of the beachheads at Port Lyautey in Morocco.

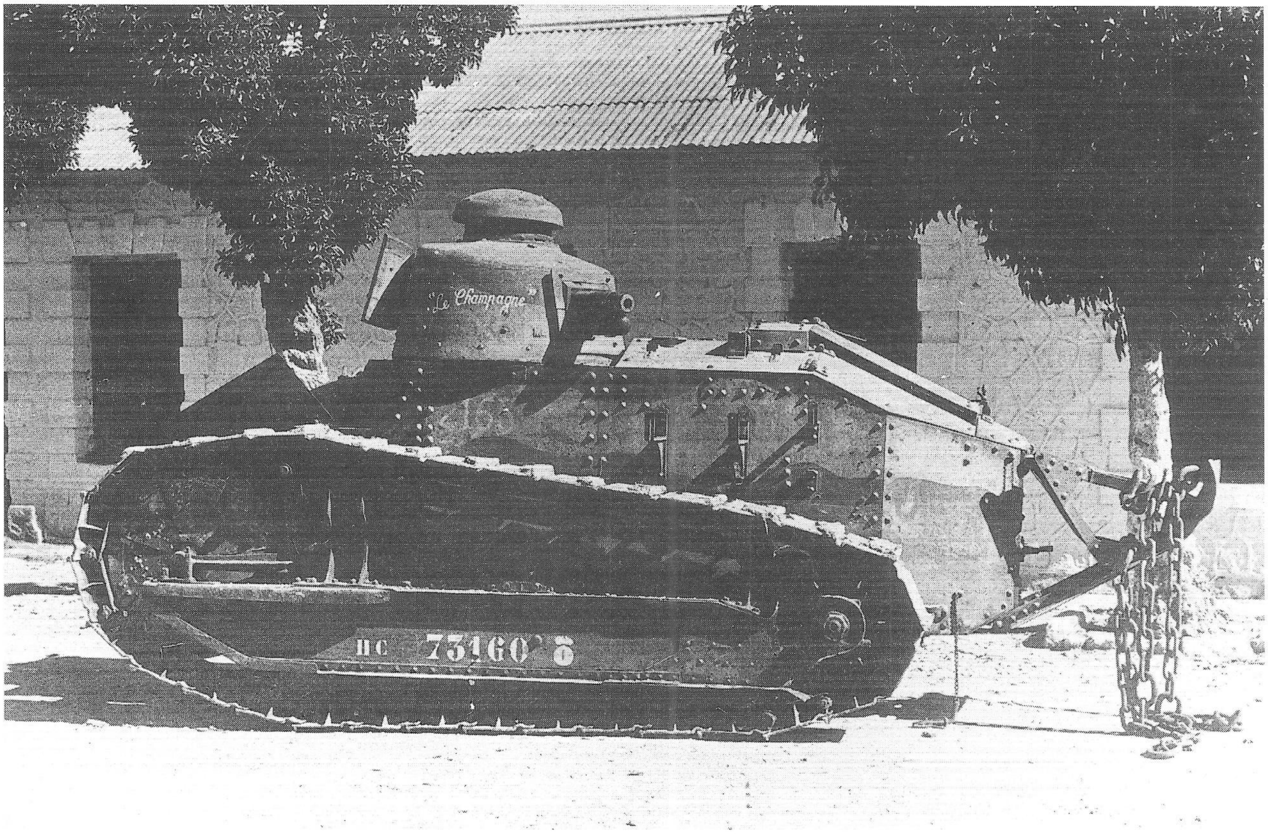
By 1939, **Finland's** small force of Renault FTs was worn out. Following the Soviet invasion, they were used mainly as static pillboxes. The **Greek Army** was provided with 11 Renault FTs in 1940 for its war with the Italians. **Yugoslavia** still had an entire battalion—the *I Bataljon bornih kola*—operational when the Germans invaded in the spring of 1941, and these were used in the fighting.

Following the 1940 French campaign, the **Germans** salvaged 1,704 Renault FTs, the majority of which were inoperable. Some were reconditioned and employed on security duty in France and the Channel Islands. The major user of Renault FTs appears to have been the Luftwaffe, which used them for airfield security. During the construction of the Atlantic Wall a small number of FT turrets were used on *panzerstellung* pillboxes, but the APX-R turret from R-35s or H-39s was preferred due to its thicker armour. In some cases the whole Renault FT tank was simply dug in, and at least one of these was encountered by US troops at Normandy in 1944. **Romania** continued to use the Renault FT for security duties right until the end of the war. In 1940 the US supplied 329 Six-Ton Tanks to **Canada** and 212 to **Great Britain** for training purposes. Probably the last combat use of Renault FTs took place in 1945, when the independent tank section with the French garrison at the Hanoi citadel was overrun by the Japanese.

The Plates

French Great War Camouflage and Markings
Information on French wartime camouflage and markings is scanty. The Renault FT tank was normally camouflage-painted at the factory. The painting was done by hand, and the patterns seem to vary considerably from factory to factory, and on the whim of the individual painter. The usual colours were a pale sand, medium brown and dark green. On some occasions, black was used to border the colours. Due to the great haste in forming FT units, some tanks were sent from the factory in the base coat of *vert armée* (dark army green) without camouflage. These were sometimes camouflage-painted by army camouflage units.

Renault FTs usually carried one or two sets of serial numbers. The Renault-built vehicles sometimes had a Renault six-digit production *matricule* painted in white on the suspension side. These began in the 66000 series to the 73000 block (with many blocks reserved for other Renault vehicles). This *matricule* was sometimes also painted on the hull front below the two front driver hatches. Besides this number, each vehicle also received a sequential production number. These were applied at the factory in white on the hull sides, and it is not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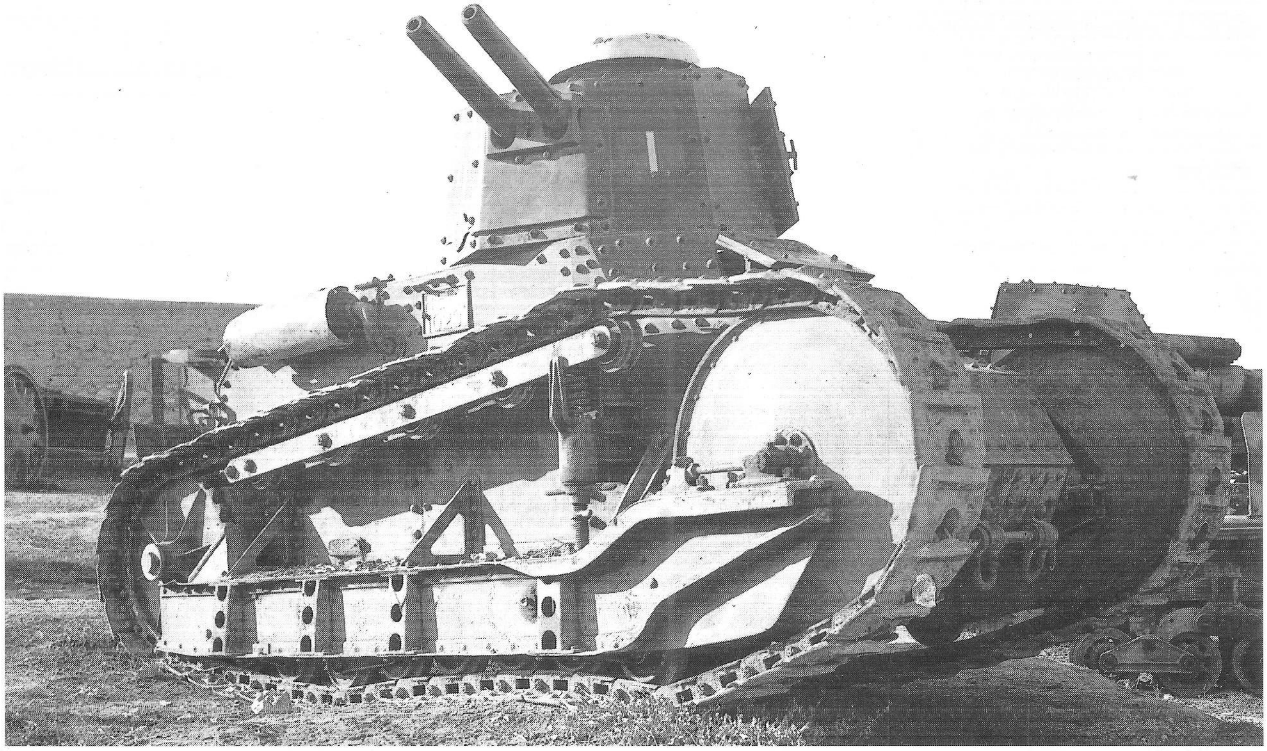
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clear if they were issued by the French Army, or if each of the four factories sequentially numbered their own vehicles. When tanks were camouflage-painted, these numbers were often overpainted. In some cases a reduced-visibility version was applied in black outline, but in many cases the number was obscured entirely. Since unit records used this number for accounting, many units chalked the number on the side of the turret or hull, or inside the front driver's door, to help in keeping unit records.

The French Assault Artillery employed a distinctive system of unit markings in 1918. The three battalions in a regiment were each assigned a colour: blue (1st); red (2nd); yellow (3rd). Each company in the battalion had a geometric shape painted on the rear hull sides: a 35cm circle for 1st Co., a 30cm square for 2nd Co. and a 45cm-high triangle for 3rd Co. Each section then had a card symbol painted on the white company insignia in the battalion colour: a spade for 1st Section, heart for 2nd, diamond for 3rd and club for 4th Section. So a tank of the 502^{e} RAS with a red club on a white triangle would be identifiable as a tank of the 4th Section—AS 315 (third company of 5^{e} BCL)—5^{e} BCL (second battalion of 502^{e} RAS). Machine gun tanks often flew a blue *fanion*, while the gun tanks flew a red pennant.

A1: Renault FT Char Canon, 'The Tiger', 2nd Company, 1st Section; Western Front 1918

This tank is in a fairly typical scheme, with black edging to the usual three-tone camouflage scheme. The insignia on the rear indicates the 1st Section, 2nd Company of the 2nd Battalion of an unidentified tank regiment. This particular company added vehicle names under the unit insignia, in this case 'Le Tigre' in white.

A2: Renault FT Char Canon, Western Front 1918

Naming tanks was popular in FT units, in this case 'Loulou'. This tank does not have the usual insignia. The Renault *matricule* is painted in white on the suspension side (6695??), while the vehicle serial number, '173', is chalked on the forward turret side.

(*Above*) After the armistice in 1940 most French tank units in North Africa were reorganised with more modern equipment. The Renault FTs were retained mainly for airfield security and other secondary rôles. This tank, named '*Le Champagne*', was seized near the Port Lyautey airport on the outskirts of Casablanca after the American invasion of Morocco in November 1942. (US Navy)

(*Below*) During the fighting on Sicily in 1943, the Italian Army was still using two companies of old Fiat 3000 tanks, one dug in for static defence and the other for airfield security. This Fiat 3000 Mod.21 was captured by the US Army. (US Army)

A3: Renault FT Char Canon, Western Front 1918

This tank is finished in overall *vert armée*, a very dark green. It is named '*Le Nain Jaune*' ('The Yellow Dwarf'). On the hull front is the Renault *matricule* in white (73530).

B1: Renault FT, 1st Polish Tank Regiment; Lodz, Poland, 1920

This was the first tank turned over from the 505^{e} RAS to the new Polish 1st Tank Regiment, becoming a tank of the 2nd Section, 1st Company, 2nd Tank Battalion. It was named '*Passe Par Tout*' which was painted in white with black shadow on the turret. The vehicle serial number '470' is on the hull side in black outline.

B2: Renault FT, 'For Freedom Fighter Comrade Lenin'; Red Army, 1919

The first tank captured from AS 303 was refurbished in Kharkov and shipped to Moscow as a gift to Lenin. It had painted on the side '*Boryets za Svobodu Tov. Lenin*' ('Freedom Fighter Comrade Lenin'), and was finished in overall olive drab.

B3: Krasnoye Sormovo M Tank, 7th Tank Unit; Moscow, 1927

The first Krasnoye Sormovo tank had an additional Hotchkiss machine gun fitted in the right turret side, which must have made the turret virtually uninhabitable. When attached to the 7th Tank Unit in Moscow in the mid-1920s, it was painted with the usual 1925-pattern insignia. The colour indicated the number of the unit: red for 1st, white for 2nd and black for 3rd. The triangle indicated the battalion; the circle the squadron; and the square the troop. The individual vehicle number was painted in white in the centre. This vehicle is thus nominally 1st Battalion, 2nd Squadron, 3rd Troop, 1st Vehicle—though the 7th Tank Unit was in fact simply a propaganda unit, with less than a third the tanks needed for a battalion!

C1: Renault FT Char Canon, Co. C, 327th Tank Bn., 1st US Tank Brigade; St. Mihiel, September 1918

The US 1st Tank Brigade followed French marking practices with some variations. This is tank '2367', but the number on the hull side is completely obscured. It was the 1st tank, 2nd Section, Co. C of the 327th (345th) Tank Battalion. The US tank units painted the unit insignia on the turret sides, and used a diamond for Co. C. They also added the vehicle number in white to the upper left of the unit design. As the 327th (345th) Bn. was the second battalion in the unit, it used red symbols. The camouflage pattern is the normal dark green over sand.

C2: Six-Ton Tank, US Marine Corps Light Tank Platoon, East Coast Expeditionary Force; Tientsin, China, 1927

The USMC tanks had the Marine Corps globe-and-anchor insignia painted on the bow in full colours. On the suspension sides 'US MARINES' was painted in black. On the rear hull sides the vehicle number was painted in black, in this case '3', with an unofficial '8-Ball' insignia added. Like US Army tanks of the period, it is painted in olive drab, a very dark brownish green.

D1: Renault FT (mod), 3rd Co., Lithuanian Tank Battalion; Radviliskis, Lithuania, 1925

The Lithuanian tank battalion used the national heraldic device, the *Vytis* knight in white on a red shield. Each of the tanks was named: *Audra*, *Kovas*, *Pagieza* and *Pykoulis* with the 1st Co.; *Drasutis*, *Grianstinas*, *Karzygis* and *Smugis* in the 2nd Co.; and *Galiunas*, *Kerstas* and *Slibinas* (here) in the 3rd Company. They were all painted in overall dark green.

D2: Renault FT TSF Radio Tank, Renault Company of Infantry Assault Tanks, Spanish Army; Morocco, 1925

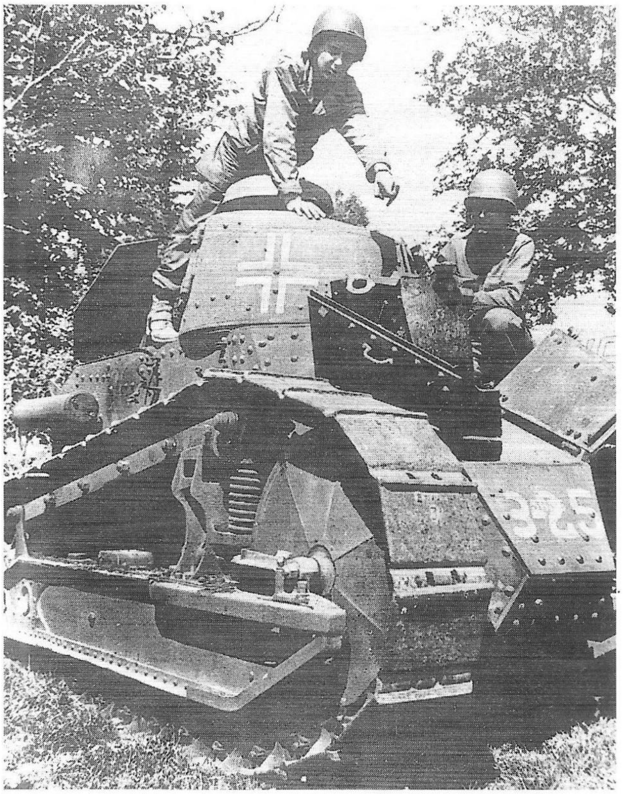
Spanish Renaults were painted in a medium grey colour after delivery from France. When sent to Morocco during the Rif War, a medium olive-green colour was applied over the vehicles in rolling bands. Each tank in the company had a black rectangle with white outline painted on the side, with '*Infanteria*' and the vehicle number in white. The vehicle number was usually repeated on the suspension side as well. This information was kindly provided by Senor Oscar Bruna Royo.

E1: Renault FT, Tank Company, 1st Chinese Cavalry Bde., National Revolutionary Army; Manchuria, 1929

The Manchurian Renaults when first used carried no markings, only the usual French sand and green camouflage. When they were attached to the Chinese NRA's 1st Cavalry Brigade they had a variety of white geometric shapes painted on as unit insignia, according to Japanese sources: the meaning of these markings is not known. The inset drawings here show these insignia, as well as the red insignia of the Manchoukuoan Army, which received most of the captured French and Chinese FTs in the late 1930s and early 1940s.

E2: Renault FT, 1st Tank Company, Brazilian Army; Rio de Janiero, 1924

This was South America's first tank. It was painted in overall dark green, and carries the Brazilian national insignia—a constellation in a white circle—on the turret sides.



German forces in France used the Renault FT in small numbers for security duty, and in some cases dug in as pillboxes. The Luftwaffe also used a number for airfield protection. US Army troops look over an abandoned FT in 1944. (US Army)

F1: Renault FT Char Canon, French Air Force; France, 1940

In 1940, the French Air Force operated a number of FTs for airfield security. They had the usual French *cocarde* insignia on the turret sides and hull front. The FTs were repainted in the late 1930s with the French scheme typical of that period, an ochre colour somewhat darker than the Great War shade, with red-brown and dark green horizontal bands.

F2: Renault FT Char Canon, 63^e BCC; Aleppo, Syria, 1940

The 63^e BCC was finished in the same scheme as metropolitan tank units such as Plate F1, except that some black 'squiggles' were added to the pattern. On the suspension side is the white *matricule*, and the white 'flaming bomb' with black '1'. When 63^e BCC was re-equipped, the FTs were turned over to autonomous companies which used them (in the same markings) during the fighting against Commonwealth forces in 1941.

G1: Renault FT Char Canon, Autonomous Company; Port Lyautey, Morocco, November 1942

This tank is finished in the same late 1930s pattern as Plates F1 and F2. The vehicle number '2165' is crudely chalked on the hull side. It has been named '*Le Champagne*' in elaborate white script on the turret side; and carries the white *matricule*, French Army flaming bomb, and the unexplained 'HC' in white on the suspension side.

G2: PzKpfw 730(f), Luftwaffe airfield security unit; Occupied France, 1944

The Germans reconditioned some FTs for use with security forces. They were painted in overall Panzer grey, with a white outline *balkenkreuz*, and a yellow vehicle number here '7', on the turret side. The Luftwaffe vehicles carried licence plates on the hull front and on the rear sides.

H1: French Assault Artilleryman, 1918

During the Great War, the uniform of the French tanker was utilitarian. A black leather jacket with black cloth collar facings was one of the distinctive elements of the dress of automotive and armoured units, along with the black beret. Although Schneider and St. Chamond crews often wore the normal infantry helmet, in 1918 the *casque modifié 1918* appeared for use in the FT: it was painted either horizon blue or olive drab. The other elements of the uniform were common to other branches of the army. Regimental numbers on the collar tab were in green on artillery black, and in white on the black leather jacket.

H2: French Tank Crewman, 1935

In 1919, the French Army developed a standardised tanker's helmet, the *casque modèle 1919* which closely resembled the interim wartime type; in peacetime service it was usually painted horizon blue. In the 1920s, a new black leather coat was adopted that was very similar in cut to the wartime jacket but differing in small details. Collar tab numbers were now green on horizon blue on the tunic, white on the leather jacket.

H3: French Tank Crewman, 1940

In the mid-1930s, the French Army began a switch from the horizon blue of the Great War to khaki. The tanker's black leather jacket eventually gave way to a brown equivalent, worn over olive overalls. A new helmet, the *mle. 35*, was adopted, painted in olive drab with a thicker brown leather front pad. Regimental collar tab numbers disappeared from the field dress for security reasons.

Notes sur les planches en couleur

A1 Camouflage courant, combinaison de couleurs sable, brun et vert, avec ici des bordures noires. L'insigne, une 'carte de jeu', identifie la 1ère Section (dont le symbole est le pique), 2ème Compagnie (carré), 2nd Bataillon (couleur bleue du pique). 'Le Tigre' est le surnom individuel de ce char. **A2** le numéro de matricule de l'usine est peint sur la suspension, le numéro de série du char '173' est marqué à la craie sur la tourelle. **A3** Parfois des chars, peints totalement en vert armée, étaient envoyés directement à leurs unités. 'Le Nain Jaune' porte le matricule '73530' en blanc à l'avant de la coque. Les chars équipés de canon arboraient des fanions rouges, ceux armés de mitrailleuses des fanions bleus.

B1 Le premier char Renault remis par le 505ème RAS à un régiment polonais, devenu char de la 2ème Section, 1ère Compagnie, 2nd Bataillon. 'Passe Par Tout' portait le numéro de série '470'. **B2** Le premier char pris à l'AS 303 par les Bolchéviques se nommait 'Combattant pour la liberté, Camarade Lénine'. **B3** Officiellement les marques indiquent 1er char, 3ème Troupe (carré noir), 2ème Escadron (cercle blanc), 1er Bataillon (triangle rouge). Notez la mitrailleuse de tourelle supplémentaire sur le côté droit.

C1 Les marques US étaient semblables à celles de l'armée française, quoique peintes sur la tourelle, avec un diamant pour la Compagnie C et un numéro individuel de char au-dessus et à gauche des symboles de l'unité. Ici le 1er char, 2ème Section, Compagnie C—le 327ème comme le second bataillon de la brigade utilisait des symboles en rouge. **C2** Le numéro de char 3 et un '8-Ball' non réglementaire, sont peints sur les côtés de la coque à l'arrière; insigne USMC avec toutes ses couleurs à l'avant de la caisse; 'US MARINES' sur la suspension.

D1 Notez l'emblème national, le chevalier Vytis à l'attaque, utilisé comme insigne de bataillon. La liste des noms des chars de chacune des compagnies est donnée dans la légende en anglais. **D2** Peints en gris après livraison à l'armée espagnole, les chars Renault espagnols portaient un camouflage de bandes vertes pour le Maroc. Tous les chars portaient la plaque en noir et blanc avec leur numéro individuel, répété généralement sur la suspension.

E1 La signification des symboles blancs sur les chars Renault des nationalistes chinois n'est pas connue. Le symbole rouge (en cartouche) est celui de la Manchourie qui reçut les char capturés, fin des années 1930 début des années 1940. **E2** le premier char sud-américain portait l'emblème national brésilien, une constellation.

F1 Couleurs de l'armée française à la fin des années 1930 et cocardes de l'armée de l'air française portées par un char assurant la sécurité du terrain d'aviation. **F2** Des lignes noires ont été ajoutées à la combinaison des couleurs réglementaires. Les chars Renault de la 63ème BCC avaient été remis à des compagnies autonomes mais continuaient à porter ces couleurs et marques pendant les combats contre les Alliés en 1941.

G1 La combinaison de couleurs est semblable à celle de la planche F; numéro '2165' inscrit à la craie sur le côté de la coque; surnom 'Le Champagne' sur la tourelle; matricule, symbole de la 'grenade' de l'armée française et un 'HC' dont l'explication n'est pas connue, sur la suspension. **G2** Peinture grise Panzer, croix nationales au trait blanc, numéro individuel jaune de tourelle et plaques d'immatriculation de la Luftwaffe à l'avant de la coque et sur les flancs à l'arrière de cette dernière.

H1 Veste de cuir, noire avec col de toile, béret noir, casque de 1918 d'équipe de pièce de char et numéros régimentaires sur le col de la tunique, en vert (chars) sur noir (artillerie). **H2** L'on peut voir de légères différences sur la veste de cuir, noire; casque de 1919; les numéros régimentaires restent blancs sur la veste, mais ils sont maintenant en vert sur bleu horizon sur le col de la tunique. **H3** Depuis le milieu des années 1930, l'uniforme devint kaki, le manteau de cuir brun et le casque de 1935 peint en kaki. Les écussons régimentaires de col en vert sur kaki disparurent, pour des raisons de sécurité.

Farbtafeln

A1 Standard-Tarnfarben Sand, Braun und Grübn, hier mit schwarzen Einfassungen. Das Spielkarten-Zeichen (Pik) identiziert 1. Abteilung, 2. Kompanie (Viereck) und 2. Bataillon (Pik in Blau). *Le Tigre* ist ein individueller Panzername. **A2** Die Matricule-Nummer ab Werk wurde auf die Aufhängung gemalt, und die Panzer-Seriennummer '173' mit Kreide auf den Turm. **A3** Manchmal wurden Panzer gleich in der Tarnfarbe *Verte Armée* direkt zu den Einheiten versandt. *La Nain Jaune* hat die Matricule '73530' in Weiss an der Vorderseite. Panzer mit Kanonen zeigten rote Wimpel, Panzer mit Maschinengewehren blaue Wimpel.

B1 Der erste von 505eRAS den Polen übergebene Panzer ging an die 2. Abteilung, 1. Kompanie, 2. Bataillon. *Passe Par Tout* hatte die Seriennummer '470'. **B2** Der erste von den Bolschewiken von AS 303 erbeutete Panzer wurde 'Freiheitskämpfer Genosse Lenin' genannt. **B3** Diese offiziellen Markierungen kennzeichnen 7. Panzereinheit, 1. Fahrzeug, 3. Truppe (schwarzes Viereck), 2. Schwadron (weisser Kreis), 1. Bataillon (rotes Dreieck). Siehe zusätzliches Maschinengewehr rechts am Turm.

C1 US-Markierungen waren den französischen ähnlich, aber auf den Turm gemalt, mit einer 'Karo'-Form für Kompanie C, einer weissen Panzernummer darüber und links vom Einheitsabzeichen. Dies ist das 1. Fahrzeug, 2. Abteilung, Kompanie C; als 2. Bataillon in der Brigade benutzte Panzer-Bataillon 327 rote Abzeichen. **C2** Panzer No. 3 ist rückwärts an den Seiten zusammen mit dem inoffiziellen '8 Ball' aufgemalt; das USMC-Abzeichen, vollfarbig, an der Vorderseite; 'US MARINES' auf der Aufhängung.

D1 Siehe nationales Wappen—der Vytis-Ritter, hier als Bataillonsabzeichen verwendet. Panzernamen für jede Kompanie werden im englishchsprachigen Bildtext angegeben. **D2** Spanische Renaults wurden nach ihrer Lieferung an Spanien grau gestrichen und erhielten grüne Tarnstreifen, ehe sie nach Marokko gebracht wurden. Alle Panzer zeigen die schwarzweisse Tafel mit ihren individuellen Nummern, meist wiederholt auf der Aufhängung.

E1 Die Bedeutung der weissen Abzeichen an Renault-Panzern der nationalchinesischen Armee ist unbekannt. Das rote Abzeichen bedeutet die Mandschurei, wo die erbeuteten Renaults Ende der 30er und Anfang der 40er Jahre hinkamen. **E2** Der erste südamerikanische Panzer zeigt das nationale brasilianische Konstellations-Emblem.

F1 Ein französisches Farbschema aus den späten 30er Jahren, und die *Cocardes* der französischen Luftwaffe an einem Wachepanzer für Flugplätze. **F2** Das Standard-Anstrichschema wurde durch schwarze Linien ergänzt. Die 63eBCC Renaults wurden autonomen Kompanien übergeben, trugen aber immer noch diese Farben und Markierungen, als sie 1941 gegen die Alliierten eingesetzt wurden.

G1 Dasselbe Farbschema wie auf Abbildung F; Mit Kreide geschriebene Nummer '2165' an der Seite; der Spitzname *Le Champagne*; Matricule, 'Granaten'-Symbol der französischen Armee und ein ungeklärtes 'HC' auf der Aufhängung. **G2** Panzergraues Anstrichschema, weiss umrissene national Kreuze, gelbe Einzelnummer am Turm; Luftwaffe-Nummerntafeln an den Seiten vorne und hinten.

H1 Schwarze Lederjacke mit Stoffkragen, schwarze Mütze, Panzerhelm aus 1918 und Regimentsnummern in Grün (Panzer) auf Schwarz (Artillerie) auf dem Kragen der Bluse. **H2** Kleine Unterschiede zwischen den schwarzen Jacken sind erkennbar; Helm von 1919; Regimentsnummern bleibe auf der Jacke weiss, aber Grün auf Blau am Kragen der Bluse. **H3** Seit Mitte der 30er Jahre gab es Khaki-Uniformen, braunen Ledermantel und khakifarbenen Helm von 1935. Aus Sicherheitsgründen ver schwanden die Regiments-Ecussons am Kragen in Grün auf Khaki.

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Avec annotations en francais sur les planches en couleur

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- **(6) The Lee/Grant Tanks in British Service**
- **(8) US 1st Marine Division 1941–45**
- **(13) The Churchill Tank**
- **(15) The Sherman Tank in British Service 1942–45**
- **(16) The Panzerkampfwagen III**
- **(17) The Stuart Light Tank Series**
- **(18) The Panzerkampfwagen IV**
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- **(21) The PzKpfw V Panther**
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- **(30) Polish Armour 1939–45**
- **(31) US Half-Tracks of World War II**
- **(32) The SdKfz 251 Half-Track**
- **(33) German Light Panzers 1932–42**
- **(34) M113 Series**
- **(35) Armour of the Pacific War**
- **(36) Long Range Desert Group**
- **(37) Modern Soviet Combat Tanks**
- **(38) Mechanised Infantry**
- **(39) US Armour Camouflage and Markings 1917–45**
- **(40) US Light Tanks 1944–84; M24 Chaffee, M41 Walker Bulldog and M551 Sheridan**
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- **(43) The M2 Bradley Infantry Fighting Vehicle**
- **(44) Anti-Tank Helicopters**
- **(45) Amtracs: US Amphibious Assault Vehicles**
- **(46) The Renault FT Light Tank**

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